

HEMI-PLEGIA

paralysis of ½ of the body due to Δ tract lesion

- **from** $\Rightarrow$ **Contra-lateral Cortex**
- **To** $\Rightarrow$ **Ipsi-lateral C₅** (origin of Brachial plexus in case of SC lesion)

Where is the lesion?!

➤ CORTICAL MCA Occlusion "main stem"

MONOPLÉGIA AS A START DT

Wide distribution of Betz cells in area 4.

different Bl. Supply of its areas.

- Medially by ACA $\rightarrow$ LL.
- Laterally by MCA $\rightarrow$ Face & UL

CORTICAL SENSORY LOSS IN THE PARALYZED LIMB

$\Downarrow$
as the sensory area is near to the motor area

CORTICAL MANIFESTATIONS

- **APHASIA. "DYSARTHRIA"**
- **CONJ. EYE DEV. TO SAME SIDE OF LESION.**
- **MOTOR JACKSONIAN FTS. "FOCAL EPILEPSY"**

➤ CAPSULAR

- **hemi-plegia / hypo-thesia** (opp. side)
- **7 - 12 CN $\Rightarrow$ UMNL** (opp. side)
(12) Tongue dev. to (same side of hemi-plegia)
(7) Mouth dev. to (same side of lesion)
- **homonymous hemi-Anopia.**

conjugate eye dev. to one side

- ipsi-lateral in cortical lesion
- contra-lateral in pontine lesion

➤ BRAIN STEM "doesn't appear on CT scan"

- **hemi-plegia / hypo-thesia** (opp. side)
- **CN $\Rightarrow$ LMNL According to site** (same side) $\swarrow \searrow$ **crossed hemi-plegia**

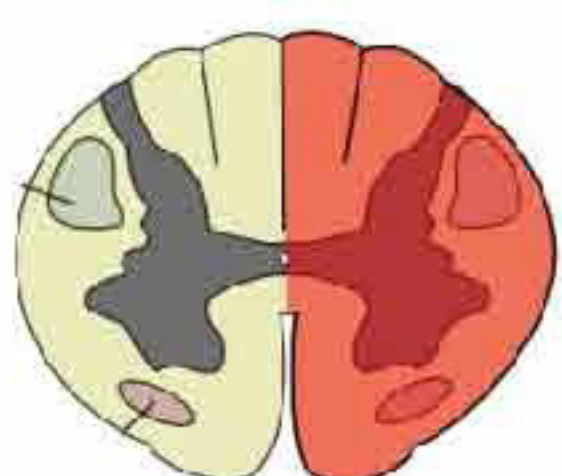
	MID-BRAIN	pons	MO
CN	3,4	5,6,7	9,10,11,12
pupil	Dilated	pin pointed. "at affection of symp. Chain"	normal
breathing	Neurogenic hyperv.	Apneustic. (post. inspiratory pause)	Ataxic br.

HYPER-VENTILATION:

- 1) DKA.
- 2) UREMIC.
- 3) BS LESION.

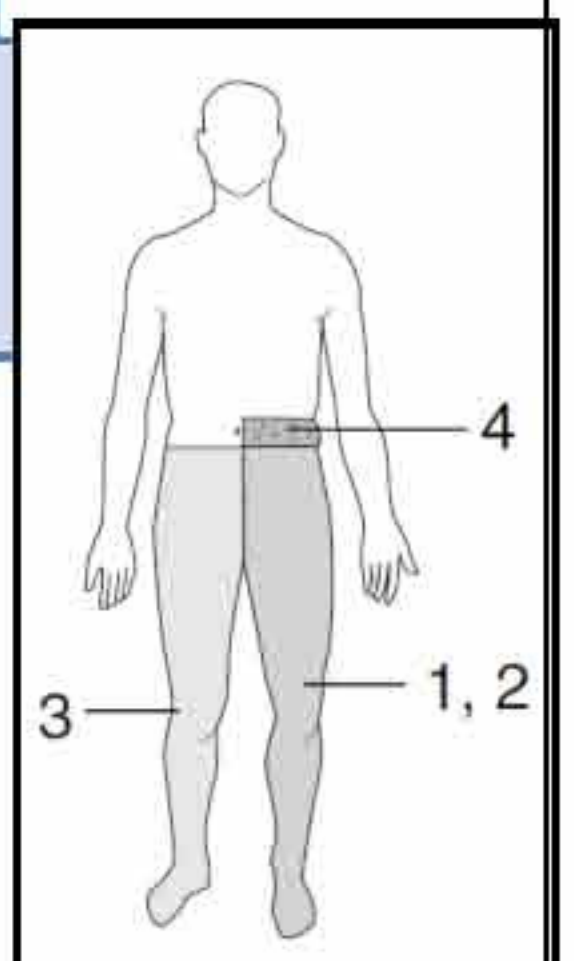
BROWN-SEQUARD \$ "SPINAL HEMI-PLEGIA"

"uni-lateral lesion above C₅"



- **AT! LEVEL**
 - MOTOR** $\rightarrow$ LMNL (same side)
 - SENSORY⁽⁴⁾** $\rightarrow$ LOSS OF ALL SENSATIONS. (same side)
- **BELOW! LEVEL**
 - MOTOR** $\rightarrow$ UMNL = **hemi-plegia⁽¹⁾** (same side)
 - SENSORY** $\rightarrow$ PC⁽²⁾ loss of deep sens & Crude touch. (same side)
 - SPINO-TH.⁽³⁾** loss of pain & Temp. (opp. side)

DISSOCIATED SENSORY LOSS



VISIT...

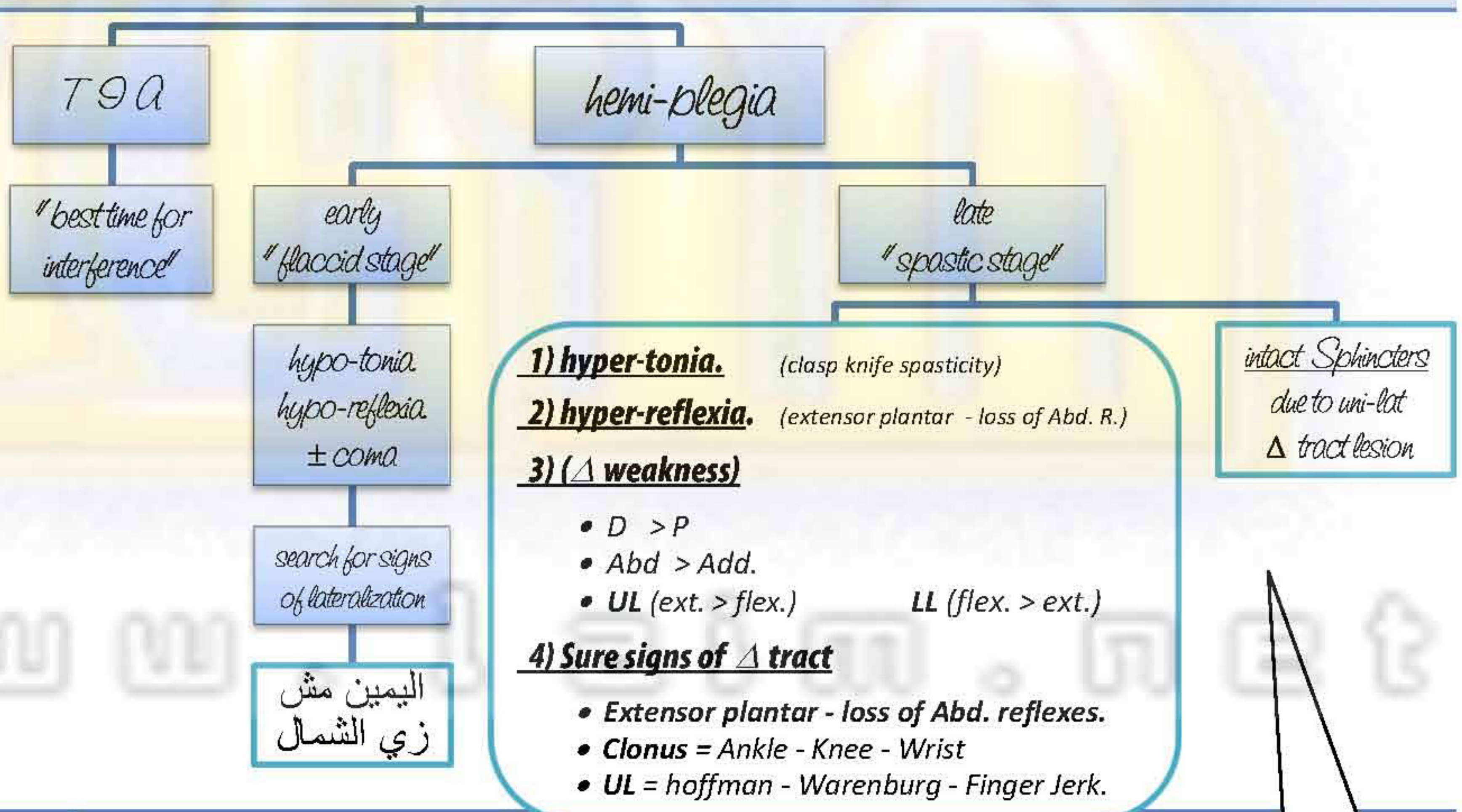
LANZAROTE
Caliente.COM

-What is the lesion?!

dramatic onset
in hge & Embolism

	Inflammatory	Vascular	S O L
onset / course	ACUTE / REGRESSIVE	ACUTE / REGRESSIVE	GRADUAL / PROGRESSIVE
causes	Encephalitis - Abscess	cerebro-vascular stroke	Meningioma - Glioma
	Meningial irritation 2F = FEVER - FITS	hge & lacunar inf. "dramatic onset" Embolism Thrombosis	↑ ICT "4 Ps .. see later"
		HTN - DM. Bl. Tendency. IC Aneurysm. MVD AF - IEC LA Myxoma 1) Atherosclerosis. 2) Vasculitis. (♀ = SLE / ♂ = PAN) 3) Thrombophilia.	

➤ stages of hemi-plegia



INVEST.	1) CT SCAN if NORMAL MRI TO DETECT RECENT OR LACUNAR INFARCTION & BS LESION) 2) EEG → focal epilepsy.
Complications of hemi-plegia	prolonged bed rest: 1) BED SORES. 2) CONSTIPATION. 3) OSTEOPOROSIS. PSYCHOSIS. DVT → PULM. EMBOILSIM. WASTING

UL → flexed – Adducted.
LL → EXTENDED – Adducted.
(رجليه زي العصاية)
↓
Circumduction gait

Treatment of hemi-plegia

(Dehydrating measures + CARE OF COMA + Symptomatic + ...)

ANTI-VIRAL "Acyclovir Inf."	INFARCTION ⇒ ANTI-COAG "heparin" ± Antiplatelets HGE. ⇒ CONSERVE but if HUGE HEMATOMA → devacution.	SURGICAL RESECTION.
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PARA-PLEGIA

"paralysis or paresis of both LL"



PARA-plegia may be due to:

- Focal → e level
- Systemic → No level.
- Disseminated → No level

➤ Cl./P of PARA-PLEGIA WITH LEVEL

- At! LEVEL → MOTOR → LMNL → hypo-tonia / hypo-reflexia / marked wasting.
 → SENSORY → Loss of all sensations.

➤ BELOW! LEVEL

- MOTOR → UMNL

<i>early flaccid stage</i>	<i>late spastic stage</i>
✓ hypo-tonia.	✓ hyper-tonia. (clasp knife)
✓ hypo-reflexia.	✓ hyper-reflexia / bilat. extensor plantar
	✓ weakness ... (c hemi-plegia) ... Gait

- SENSORY → Loss of All sensations.

- SPHINCTERIC (IF BILAT-LESION) → ACUTE → RETENTION OVER FLOW.
 → GRADUAL → AUTOMATIC BLADDER.

➤ COMPLICATIONS & TTT = AS Hemi-plegia + NEUROGENIC bladder (UTI / Reflux Neph. / Back pr. on kidney)

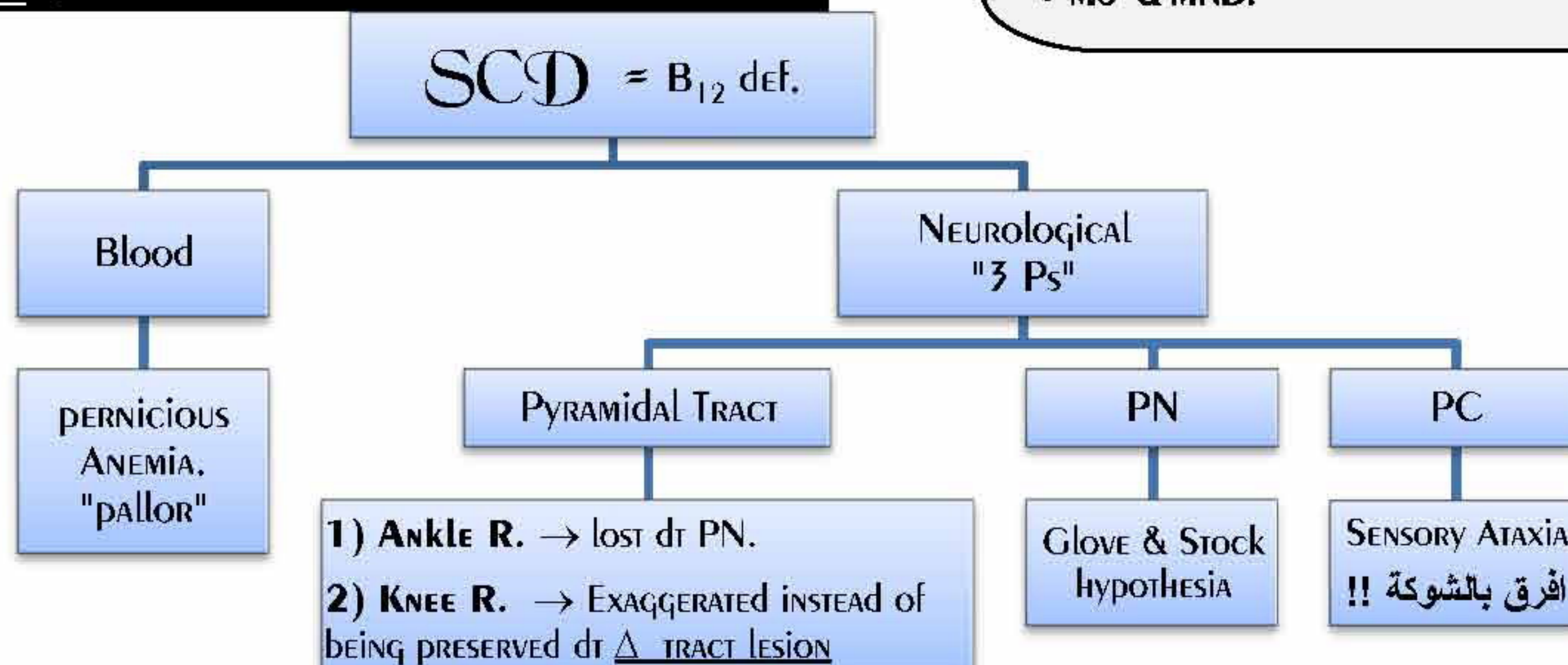
SYSTEMIC CAUSES OF PARA-PLEGIA

GRADUAL / PROGRESSIVE.

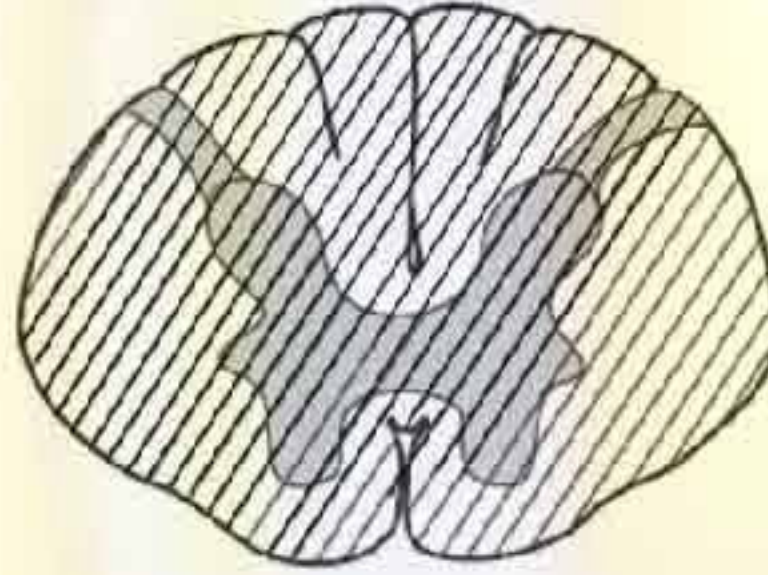
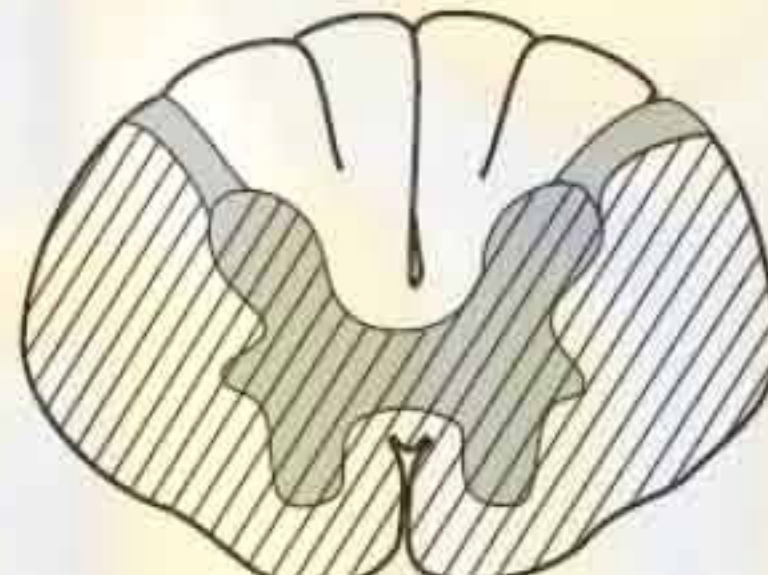
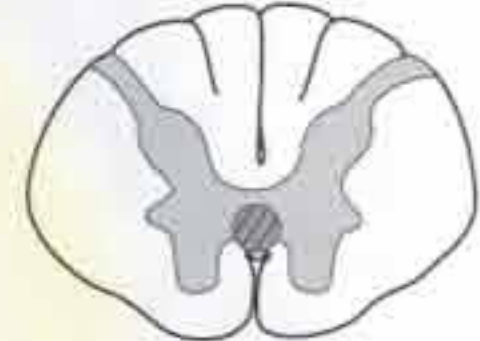
- 1) BI-LATERAL / SYMMETRICAL.
- 2) AFFECT SC BELOW UPWARDS: EARLY → PARA-PLEGIA WITHOUT LEVEL.
LATE → QUADRI-PLEGIA.
- 3) SELECTIVE → SPHINCTERS & ABD. REFLEXES ARE SPARED.

Other CAUSES of SYSTEMIC PARA-plegia:

- SCD = 3 Ps (pernicious An.)
- Pellagra = SCD - PC. (pellagic rash)
- F. Ataxia = SCD + Cerebellar.
- MS & MND.



Focal SC lesion! = para-plegia e level

	Inflammatory	Vascular	compression	
onset/course	ACUTE / REGRESSIVE.	ACUTE / REGRESSIVE.	GRADUAL / PROGRESSIVE EXCEPT (TRAUMA IS ACUTE)	
causes	TV Myelitis (whole segment) VIRAL – AUTO-IMMUNE?! 	ANT. SPINAL A. Occlusion (Thrombosis + Embolism – polycythemia) (ant 2/3 of SC) 	extra-medullary 1) Vertebral - Pott's disease. "TB" - Tumor. "MM / Osteoma / 2^{ry}" - Trauma "acute onset". 2) Dural: - extra-dural → leukimic deposits. - Dural → meningitis. - Intra-dural → meningioma. 3) Disc-prolapse "MC"	intra-medullary 1) syringo-myelia:  (Gliosis around the central canal of SC in lower Cx & upper Thoracic segments) 2) Tumors of SC = Glioma
Cl./P of Focal SC lesion				
الأكلشيه	fever → acute paraplegia LOSS OF ALL SENSATIONS. Level = multiple segments.	no fever + acute paraplegia - spino-thalamic → loss of pain & temp - PC spared → preserved crude touch. "DISSOCIATED SENSORY LOSS"	ccc. by: good prognosis	AL 3AKS!!! sensory loss pattern earlylate jacket hypoesthesia only bec. PC is sparedpara-plegia (الأكلشيه) "DISS. SENSORY LOSS"
	NB: Ascending myelopathy → Quadri-plegia. "EMERGENCY"			
Invest	1) CT SCAN / MRI TO EXCLUDE (COMPRESSION & MS FOR EARLY diag.) (with Gadolinium Enhancement) 2) CSF ⇒ INFLAM. changes in TV myelitis.		1) CT SCAN / MRI (FOR EARLY DIAGNOSIS) 2) CSF ... COLOR → XANTHO-CHROMA. ↑↑ PROTEINS → SPONT. COAGULATION. ↓↓ CELLS → CYTO-ALBUMINI.....FROIN \$.	
Treatment	1) STERoids – ACTH. 2) Acyclovir infusion.	CARE of sphincters.	1) Symptomatic. 2) SURGICAL decompression EARLY in EXTRA-MEDULLARY.	

fever → acute paraplegia:

- 1) TV Myelitis.
- 2) GB \$.
- 3) ENCEPHALITIS.
- 4) MS.

Cl./P of Focal SC lesion

الأكلاشيه

- 1) AT! LEVEL
- 2) BELOW! LEVEL

fever → acute paraplegia
LOSS OF ALL SENSATIONS.

Level = multiple segments.

NB: Ascending myelopathy → Quadri-plegia. "EMERGENCY"

no fever + acute paraplegia

- spino-thalamic → loss of pain & temp
- PC spared → preserved crude touch.

"DISSOCIATED SENSORY LOSS"

ccc. by: good prognosis

- | | |
|---------------------------|--------------|
| 1) ROOT PAIN | EARLY |
| 2) SPHINCTER DIST. | LATE. |
| 3) MOTOR | ASYMMETRICAL |
| 4) SENSORY | EARLY SACRAL |

AL 3AKS!!!

sensory loss pattern

early

late

jacket hypoesthesia only
bec. PC is spared

para-plegia
(الأكلاشيه)

"DISS. SENSORY LOSS"

Invest

- 1) **CT SCAN / MRI** TO EXCLUDE (COMPRESSION & MS FOR EARLY diag.)
 (with Gadolinium Enhancement)
- 2) **CSF ⇒ INFLAM. CHANGES** IN TV myelitis.

- 1) **CT SCAN / MRI** (FOR EARLY DIAGNOSIS)
- 2) **CSF ... COLOR** → XANTHO-CHROMA.
 ↑↑ **PROTEINS** → SPONT. COAGULATION.
 ↓↓ **CELLS** → **CYTO-ALBUMINI.....FROIN \$.**

DD of Diss. sensory loss

- 1) **ANT. spinal A. occ.**
- 2) **EARLY syringe-myelia**
- 3) **BROWN-SEQUARD\$.**
- 4) **LAT. Medulla \$**

Treatment

- 1) **STERoids – ACTH.**
- 2) **Acyclovir infusion.**

CARE OF SPHINCTERS.

- 1) **SYMPTOMATIC.**
- 2) **SURGICAL decompression EARLY** IN EXTRA-MEDULLARY.

Neuropathy

MONO-NEUROPATHY	MONO-NEUROPATHY MULTI-PLEX	POLY-NEUROPATHY
1 N. TRUNK in 1 limb	> 1 N. TRUNK in 1 limb	H. FAMILIAL PMA AUTO-IMMUNE GB \$ 2^{RY} TO
- DM - TRAUMA. - COMPRESSION. "CARPEL TUNNEL \$"	السكر و العفريت الـ4 - DM. - SARCOIDOSIS – AMYLOIDOSIS - PAN – LEPROSY.	1) INFLAM. → VIRAL/ SARCOID. 2) METABOLIC → DM – UREMIA. 3) DRUG → INH / lead / Alcohol. 4) NUTR. → SCD / PELLAGRA. 5) CT DISEASE → RA / SLE 6) VASCULAR → PAN.

PERIPHERAL - NEUROPATHY

1) <u>MOTOR</u>	LMNL ⇒ hypo-tonia / hypo-reflexai / wasting.	Bilat. & SYMMETRICAL LMNL WEAKNESS D > P "el 3aks fil GB S" lost ANKLE / PRESERVED KNEE R. EXT. > FLEX. HAND & FOOT drop. Gait (high steppage)	
2) <u>SENSORY</u>	SUPERFICIAL ⇒ PARATHESIA THEN GLOVE & STOCK HYPO-THESIA. DEEP ⇒ SENSORY ATAXIA → Vibration <u>Lost Dx</u> (Maleoli - Styloid process) !! افرق بالشوكة !! → <u>Preserved Px.</u> (ASIS & Clavicle) (WHILE PC IN FOCAL LESION → LOSS OF ALL DEEP SENSATION Px & Dx.)		
3) <u>AUTONOMIC</u>	(DIARRHEA / CONSTIP. - GASTROPARESIS- IMPOTENCE - ORTHO-STATIC HYPO)		

DIFFERENT TYPES OF PN

	DIABETIC NEUROPATHY	GB \$	PMA
etiology	μ ANGIOPATHY OF VASA NERVORUM: - Glycosylation of collagen f. → Thick BM & Narrow lumen ⊕ Sorbitol pathway → V. Toxic to PN.	INFLAM. DEMYLINATING D. of PN AUTO-IMMUNE post-viral ?! (1-4 wks)	H. FAMILIAL (AD)
onset / course	GRADUAL / Slowly prog.	ACUTE / REGRESSIVE	GRADUAL / Slow prog.
neuropathy الأكلأشيه +	DIABETIC Triopathy	fever → then Acute para-plegia	INVERTED wine shape of calf. + pes CAVUS.
1) MOTOR / SENSORY	SENSORY MAINLY - EARLY → MONO NEUROPATHY. (LL B4 UL) - LATE → POLY NEUROPATHY.	MOTOR MAINLY BUT P > D - ASCENDING FROM LL – UL – TRUNK. - UP TO RESPIRATORY MS. "EMERGENCY"	MOTOR MAINLY
2) AUTONOMIC	✓	✓	✓
3) CN	"ocular" 3 4 6 → DIPLOPIA	7 BI-LATERAL	

TREATMENT

1) Control <u>bl. SUGAR</u> . 2) <u>Vit. B</u> complex. 3) <u>CBZ</u> for s. PARATHESIA. (OR GANA-PENTIN)	1) PLASMA-PHARESIS. "choice" 2) IV γ globulins. 3) STEROIDS ?! INVEST. = CSF → Cyto-alb. Diss. EMG / NCV.	DD of Bi-lateral VII paralysis 1) Bell's palsy. 2) GB \$ 3) MS. 4) Sarcoidosis.
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PARKINSONISM

"DEGENERATION of pigmented NEURONS in SN & BG → ↓↓ Dopamine"

Idiopathic

H. FAMILIAL

2^{RY} TO

PARALYSIS
AGITANS

Wilson's D.

1) ATHEROSCLEROSIS.

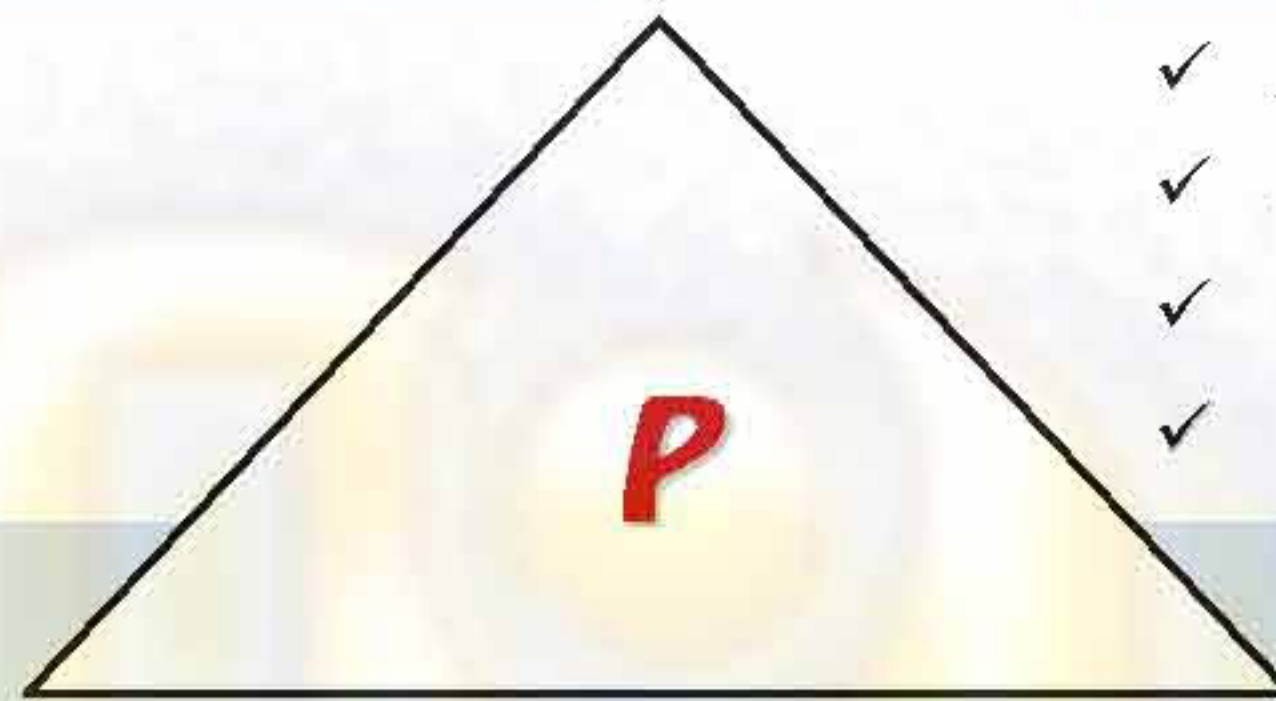
2) POST-ENCEPHALITIC.

3) **DRUGS:** ANTI-DOPAMINERGICS AS HALOPERIDOL (TTT. of Schizop. / MANIA)

No specific lab invest. is required except if Wilson's is suspected.

No sensory loss.
No weakness.
No Fasciculations
(Bradykinesia only)

static Tremors



✓ $D > P$.

"chorea ال عكس"

✓ Regular - Rhythmic.

"pill rolling"

✓ coarse. "↑ Amplitude / ↓ Frequency"

✓ ↑ e stress & ↓ during sleep.

Rigidity "P > D"

- Lead pipe or cog wheel. "if interrupted by Tremors"
- Flex. > Ext. → gorilla like attitude.
- Difficulty in start of walk → short step gait. (shuffling with propulsion)

Brady-kINESIA "slow MOVEMENT"

- Mask face.
- slow monotonous speech.
- no swinging during walking.
- CAN'T RESIST PROPULSION & RETRO-PULSION.

OTHER ASSOCIATIONS:

- **OCULO-GYRIC CRISIS** ⇒ SUDDEN SPASM OF OF CONJUGATE EYE MS. UPWARDS.
- **GLABELLAR REFLEX (7th CN)** ⇒ PERSISTENT.
- **μ -GRAPHIA. ... POSTURAL HYPOTENSION**

CLINICAL TYPES

	post-encephalitic	paralysis agitans	Atherosclerotic
• AGE	ANY AGE	40 - 60 YS	> 60 YS
• ONSET & COURSE	ACUTE / REGRESSIVE	GRADUAL / PROGRESSIVE	GRADUAL / PROGRESSIVE
• CL/P	RIGIDITY = TREMORS	TREMORS > RIGIDITY	RIGIDITY > TREMORS
• Δ SIGNS	✓ WEAKNESS	x	✓ WEAKNESS. "DT CEREBRAL ISCHEMIA"

Treatment of parkinsonism

BradyKINESIA

DOMAINE ⊕

L-Dopa OR SINEMET

TREMORS / Rigidity

Anti-Cholinergic
"in DRUG INDUCED"

S/E = DELEIRUM / DRY MOUTH / ARRHYTHMIA
RETENTION OF URINE ... SUPRA-PUBIC DULLNESS

Others

- 1) ββs.
- 2) AMANTADINE ..MS. RELAXANS.
- 3) SURGICAL ADRENAL T. IN SN.

chorea

"invol. movement dt ↑ dopamine in caudate nucleus of BG"

	RHEUMATIC CHOREA "Sydenham's CHOREA = St. Vitus's Dance"	HUNTINGTON'S CHOREA
CAUSE	1) MAJOR CRITERIA of Rh. F. 2) NEVER E ARTHRITIS AS IT OCCURS <u>v. LATE</u> (NORMAL ESR)	h. familial (AD) DEGENERATIVE of BG & F. lobe
AGE	5-15 ys. (♀ > ♂)	30-40 ys.
Types	1) Classic type. 2) CHOREA mollis → SEVER hypOTONIA. 3) CHOREA MANICAL → SEVER EMOTIONAL EXCITEMENT. 4) CHOREA GRAVIDARUM → E PREGNANCY. 5) CHOREA GRAVIS → INTERFERES E SLEEP.	
CL./P	<u>static tremors</u> 1) P > D. 2) sudden, jerky - sem-ipurpose 3) Irregular - Dysrhythmic. 4) ↑ e stress / ↓ e sleep ✓ Grimacing ✓ Unable to keep the tongue protruded without being supported on his teeth. <u>hypo-tonia</u> ✓ SCAPHOID HAND. ✓ PENDULAR KNEE JERK. ✓ DANCING GAIT. <u>emotional instability</u> chorea	Chorea Frontal lobe atrophy BG ↓ ↓ ↓ Memory dist. & abnormal behavior Dementia & psychosis invol. Movement
Treatment	Self limited (6 ms.) ...Add ANTI-DOPAMINE = Haloperidol "TO CONTROL SYMPTOMS DURING THIS PERIOD"	Haloperidol.

	CL. /P	CAUSE	TTT.
1) ATHETOSIS	D > P - ↑ tone - snake like mov.	BG "putamen"	Anti-CHOLINERGIC
2) HEMI-BALSIMUS	Sudden <u>violent</u> mov. Of the limb.	Sub-thalamic N.	Haloperidol.
3) DYSTONIA	<u>Torsion like mov.</u> Of one limb or trunk. Due to slow sustained ms. contraction	Wilson's / CP / Pheno-thiazines PRIM PERAN = METOCLOPRAMIDE	1) CBZ. 2) Anti-Ch. 3) BOTULINUM TOXIN.

Transient Ischemic Attacks

"reversible acute focal neural deficit due to transient cerebral ischemia el 24 hrs."

TIA

Cl./P of TIA
"focal neural manifest"

Etiology

RF

GENERAL

if TIA Occurs in

Wall

Lumen

spasm

Emboli

"Rapidly dissolve"

Thrombosis / Atheroma.
Vasculitis
(M: PAN / F: SLE)

• Poly-cythemia
Hyper-viscosity \$.
• SCA.

• Old AGE.
• Hypertension.
• Smoking.
• Hyper-cholesterolemia.
• Collagen d. → vasculitis

• MVD → embolism.
• DM - OCP.
• ↑↑ Alcohol.
• COX 2 (-)

1) **MOTOR** → HEAVINESS THEN MONO OR HEMI-PARESIS
2) **SENSORY** → hypo-thesia.
3) **CN** → Dysarthria.
DEVIATION of MOUTH. (7-12)

V. basilar
vertigo,
diplopia, ataxia
& syncope

Carotid
Uni-lat.
TRANSIENT blindness
(AMAROSIS FUGAX)

INVESTIGATIONS of TIA

Treatment of strokes

"of Rf + CARE of COMA +"

of TIA

of RF

Dehydrating MEASURES

of INFARCTION

of HGE

1) CT SCAN → NORMAL.
2) MRA / CTA & Duplex SCAN for CAROTID vs. OR V. BASILAR SYSTEM.

1) ECG, Echo
2) BS - Lipid profile.
3) ESR - MARKERS.
4) CBC ⇒ polycythemia ⇒ hyper-viscosity \$.

1) STEROIDS
2) GLYCERIN ORAL.
3) MANNITOL ⇒ # in HF & RF

1) ANTI-COAG. # if (bl. Tendency - hgc infarction - s. HTN - IEC)
2) ANTI-PLATELETS ⇒ Aspirin (300 mg/ d) OR Dipyridamole.
THEN Low dose Aspirin. (Clopidogrel if Aspirin is #)
3) VD → CCB "STUGERON".
4) PIRACETAM (Nootropil) → improves RBCs deformability
→ improves MENTAL FUNCTION.
5) Thrombolytic Th. → TPA.

CAROTID ENDARTRECTOMY
OIN ICA STENOSIS

Avoid drugs that INTERFER with clotting.
± NEUROSURGERY

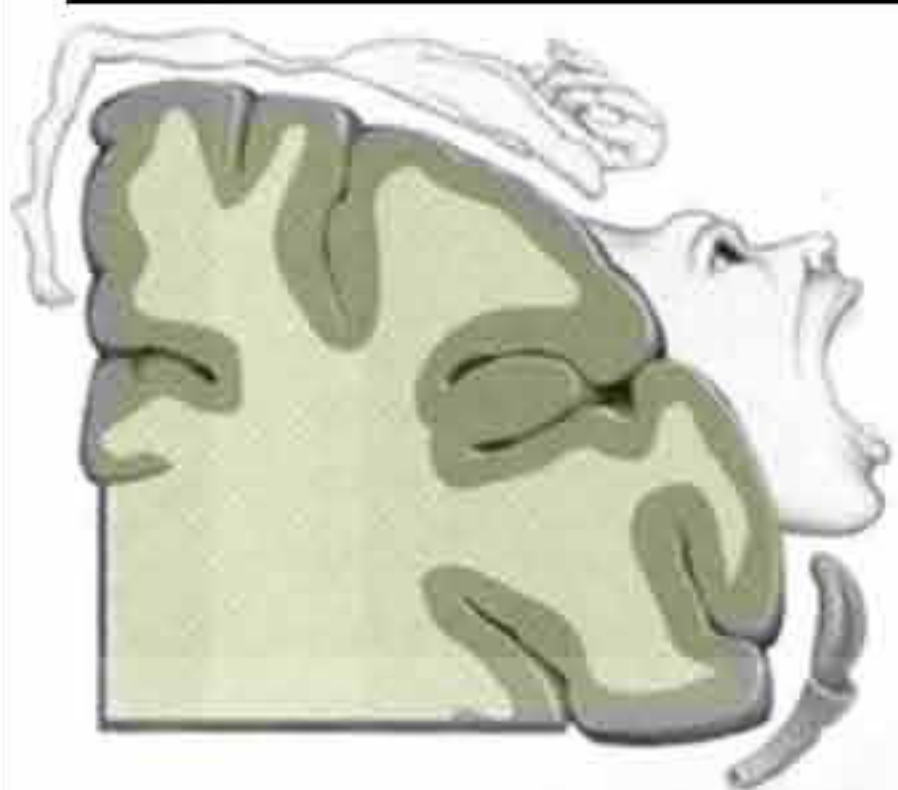
Types of hgcic strokes

	CEREBRAL HGE	SAH	SDH	EDH
➤ BVs.			Rupture of Cortical Veins	MMA.
➤ CAUSE	1) HTN. 2) Anti-Coagulant th. 3) Rupture Cong. Or Mycotic Aneurysm.	1) Rupture of IC Aneurysm. (Berry's). 2) Rupture A-V malformation. 3) Hgcic blood diseases. 4) Cerebral he → bl. reaches SA space through the ventricles.	Trivial Trauma "pass un-noticed"	Trauma with linear skull vault fracture "Wound in scalp". RF = Old age – Alcoholics.
➤ CL/P	According to the site of hgc.	<i>Triad</i> <pre> graph TD Triad[Triad] --> ICT[↑ ICT] Triad --> Irr[meningeal irritation] Triad --> VC[cerebral VC] ICT --> SSG[sudden severe headache] Irr --> NR[Neck Rigidity occurs after 12 hrs dt lysis of escaped RBCs in CSF] VC --> FS[Focal signs eg. CN ± hemi-plegia] </pre>	Fluctuation of level of consciousness. ↓ Usually asymptomatic ↓ Chronic hematoma.	Loss of consciousness for short time ↓ Lucid interval ↓ Coma.
➤ INVEST.	CT Scan – MRI + (CSF in SA hgc → RBCs)			
➤ TREATMENT	As stroke	Of the cause + 1) Analgesics. 2) Anti-fibrinolytics. 3) Steroids to ↓ Cerebral edema. 4) Nimodipine (CCB) → VD of cerebral BVs. ➤ Radiological intervention to (-) relapse.	Conservative 1) Control BP. 2) Anti-Epileptics. 3) Dehydrating measures.	Emergency. "Drainage through skull burr-holes"

Infarction = Vascular occlusion

MCA

"main stem"



cortical br.
"lateral aspect"

capsular br.
"ant & post limb"

"ant & post limb"

Frontal lobe

Temporal lobe

Parietal lobe

MONOPLÉGIA IN
FACE - UL ONLY

CORTICAL SENSORY
LOSS OF FACE - UL.

CORTICAL
MANIFEST.

"FACIO-BRACHIAL"

Internal capsule affection

hemi-plegia
(face - UL - LL)
(both limbs)

hemi-
hypothesia

hemi-plegia; but UL >> LL bec. Cortical >> Capsular weakness.

ACA

"main stem"

cortical br.

capsular br. "ant. limb only"

Frontal lobe "medial aspect"

MONOPLÉGIA IN
LL ONLY

CORTICAL SENSORY
LOSS IN LL

CORTICAL
MANIFEST.

"urinary incontinence"
(bladder centre)

Internal capsule affection

Mono-plegia
(face - UL only)

hemi-anesthesia

hemi-plegia but LL >> UL bec. Cortical >> Capsular weakness.

PCA

"main stem"

cortical br.

capsular br.

"occipital lobe"

"thalamo-geniculate a."

HH E MACULAR SPARING.
(CONRA-LATERAL)

Thalamic & on opp. side

Thalamus

Internal capsule

BG

THALAMIC PAIN
(BURNING)

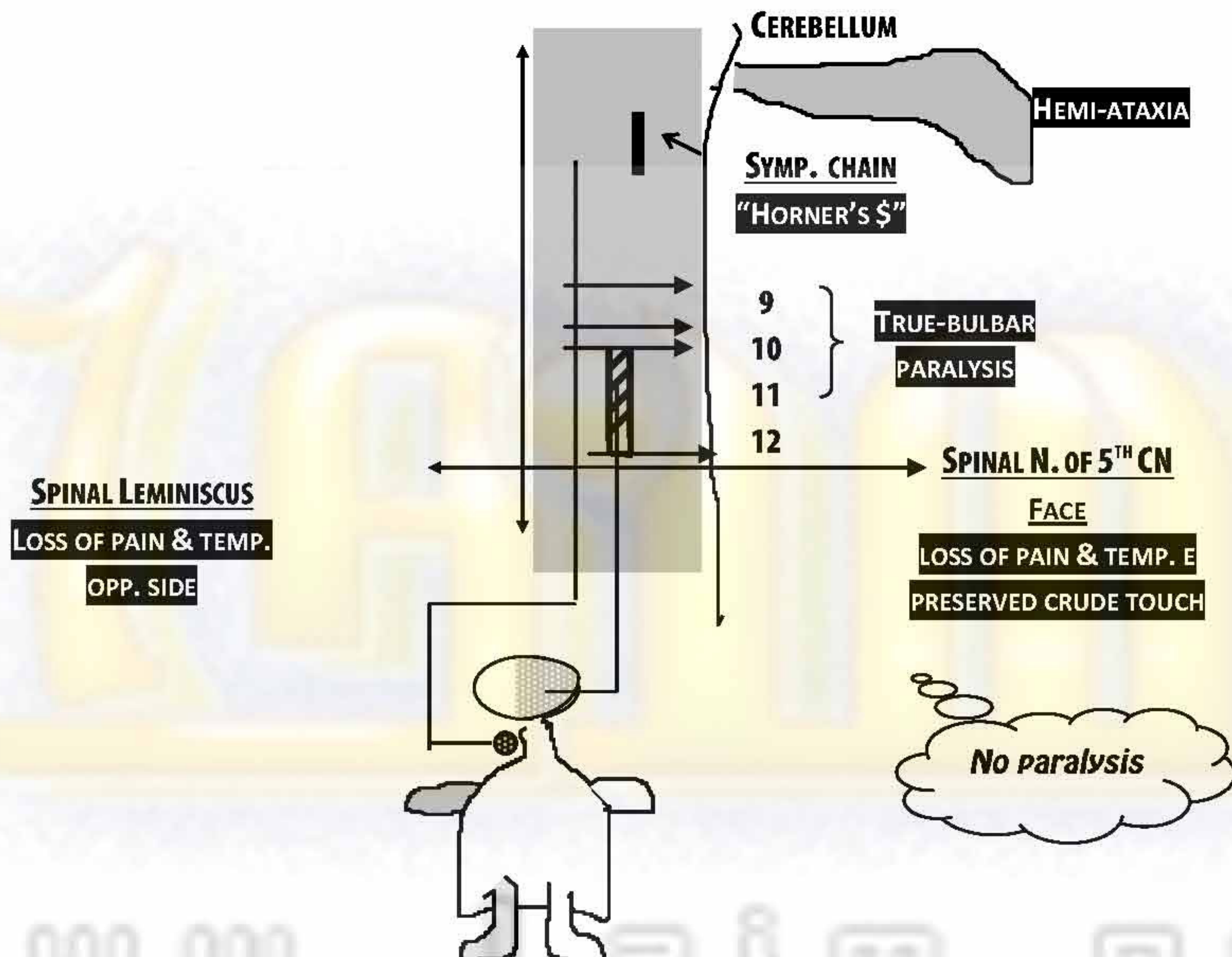
HEMI-HYPOTHESIA

CHOREO-ATHETOTIC
MOVEMENT.

Vertebro basilar insufficiency

POST. INFERIOR CEREBELLAR A = PICA = "lat. aspect of MO & Cerebellum"

LATERAL MEDULLARY \$ = WALLENBURGE \$



Cl./P → Syncope , Hicough , vomiting , vertigo

Contra-lateral

Ipsi-lateral

spinal lemniscuss lesion

⇓

loss of pain & temperature of the
body (opp. side)

☞ cerebellar

→ hemi-ataxia.

☞ symp. Chain

→ horner's \$.

☞ 9 10 11 LMNL

→ True-bulbar palsy.

☞ spinal n. of 5th CN

→ loss of pain & temperature of the face & preserve crude touch

NB: PC & Δ tract are intact bec. they lie in the middle of MO.

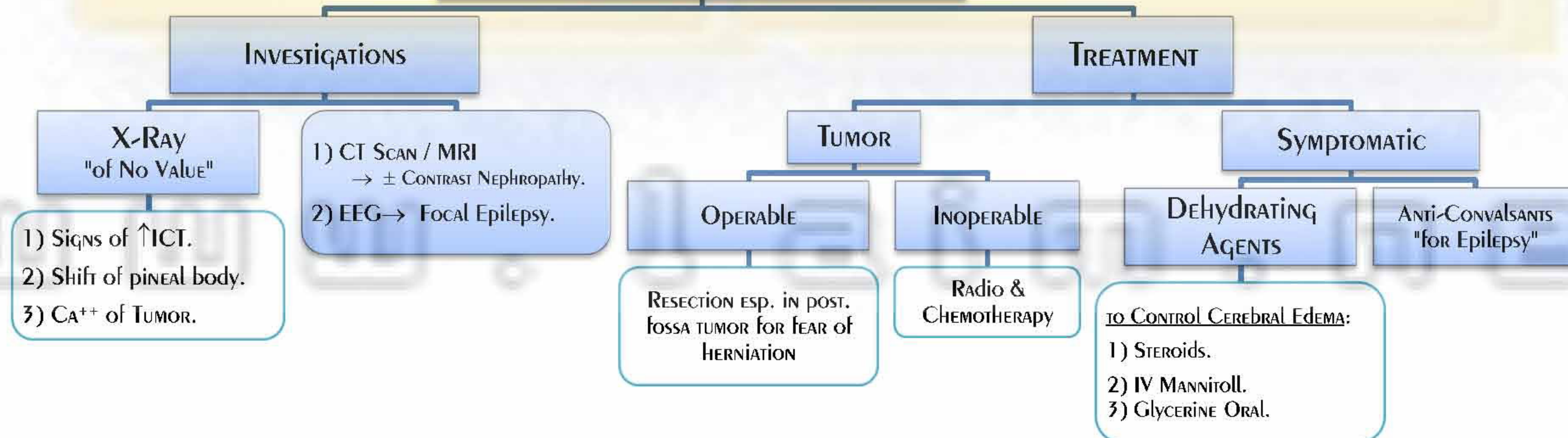
BRAIN TUMORS = SOL

1) MENINGES	MENINGIOMA (benign) from ARACHNOID.
2) Gliomas	• ASTROCYTOMA. (benign) • MEDULLOBLASTOMA (malignant) "Child – Cerebellum"
3) BVs	HEMANGIOMA.
4) NEURO-Ofibromas	ACAOUSTIC NEUROMA of 8 th CN at the CPA.
5) PITUITARY TUMORS.	(benign)
6) 1 ^{ry} Cerebral Lymphomas	(malignant)
7) METASTASIS	FROM BRONCHUS, BREAST, STOMACH, PROSTATE, THYROID AND KIDNEY.
8) SOL	TUBERCLOMA – SD HEMATOMA – ANEURYSM – ABSCESS.

1^{ry} BRAIN TUMORS → 10 %.

2^{ry} METASTASIS → 90 %.

MANAGEMENT OF BRAIN TUMORS



plateau waves:

- Attacks of $\uparrow$ ICT.
- Dt failure of brain auto-regulatory mech.
- Ppt. by sneezing coughing.

BRAIN TUMORS

$\uparrow\uparrow$ **ICT = 4 Ps**

1) **P**ERSISTENT HEADACHE.

- due to stretch of meninges.
- NEVER EXPERIENCED b4.
- NOT RELATED TO SITE OF TUMOR.

2) **P**ROJECTILE VOMITING. (Not preceded by Nausea dt $\oplus$ of CTZ in MD so not related to meals)

3) **P**APILLOEDEMA $\rightarrow$ BLURRY V.

4) **B**RAIN EDEMA AROUND THE TUMOR dt the defective BBB of the tumor's BVs.

True localizing
signs

DEPENDS ON THE
ACTUAL SITE OF
TUMOR

IRRITATION THEN
DESTRUCTION

False localizing
signs

6th CN palsy
"LONGEST IC COURSE"

Mis-diagnosis AS
PONTINE LESION.

VENTRICULAR DILATATION

3rd VENTRICLE
COMPRESSION ON
Optic CHIASMA &
pituitary gl.

LAT. VENTRICLE
PR. ON FRONTAL LOBE
"Mis-diagnosis"

Foster Kennedy S:

- Ipsi-lateral OA.
- Contra-lateral papilloedema.

frontal lobe

parietal lobe

Occipital lobe

Temporal lobe

MONOPLÉGIA (OPP. SIDE)

- ☞ **MENTAL CHANGES.** (Organic psychosis)
- ☞ **MOTOR APHASIA.** (dom. hemisphere)
- ☞ **CONJUGATE EYE DEV.** (same side)
- ☞ **FORCED GRASP REFLEX.** (1st Reflex)

- **SENSORY LOSS** (contra-lateral)

- **MOTOR APRAXIA.** (METABOLIC APRAXIA = LCF)

HH e macular sparing
(contra-lateral)

no effect on taste or smell
(Bi-lateral Represented)
Mental changes

Irritative lesions

MOTOR JACKSONIAN FIT
(FOCAL EPILEPSY)

SENSORY JACKSONIAN FIT
"PARATHESIA"

VISUAL HALLUCINATION
(FLASHES OF LIGHT & FIELD DEFECT)

UNCINATE FIT
(PSYCHOMOTOR EPILEPSY)
"كلوتش يحترق"

PITUITARY TUMOR

↑↑ ICT

True localizing signs

False localizing signs

Hormonal manifest

Neurological "2^o to compression"

CHROMOPHOBE
ADENOMA

ACIDOPHIL
ADENOMA

BASOPHIL
ADENOMA

↑ PROLACTIN
↓
MENSTRUAL
& FERTILITY.

GIGANTISM OR
ACROMEGALLY

CUSHING D.
↓
NO ↑ ICT

- Ant. → optic chiasma / ON.
- post. → brain stem lesions.
- lat. → optic tract.
- sup. → Hypothalamus
 - ✓ poly-phagia.
 - ✓ Disturbed body temp.
 - ✓ DI • Hypersomnia

ACUTE pan-hypo-pituitarism

dt hge / infarction resulting from
rupture of the weak tumor's BVs.

"pituitary apoplexy"

BRAIN STEM TUMORS

↑↑ ICT

Crossed Hemi-plegia

hemi-plagia /
hypothesia

(opposite side)

CN "LMNL"
(same side)

Mid-brain	pons	MO
3,4	5,6,7	9,10,11,12

CEREBELLO - PONTINE ANGLE TUMOR

↑↑ ICT

- a) 8th CN → ACOUSTIC NEUROMA (M/C) → TINNITUS & N. DEAFNESS.
- b) CEREBELLAR → MEDULLO-BLASTOMA → Cerebellar Hemi-ataxia
(same side)
- c) PONTINE GLIOMA. → SEE BEFORE.
- d) MENINGIOMA.

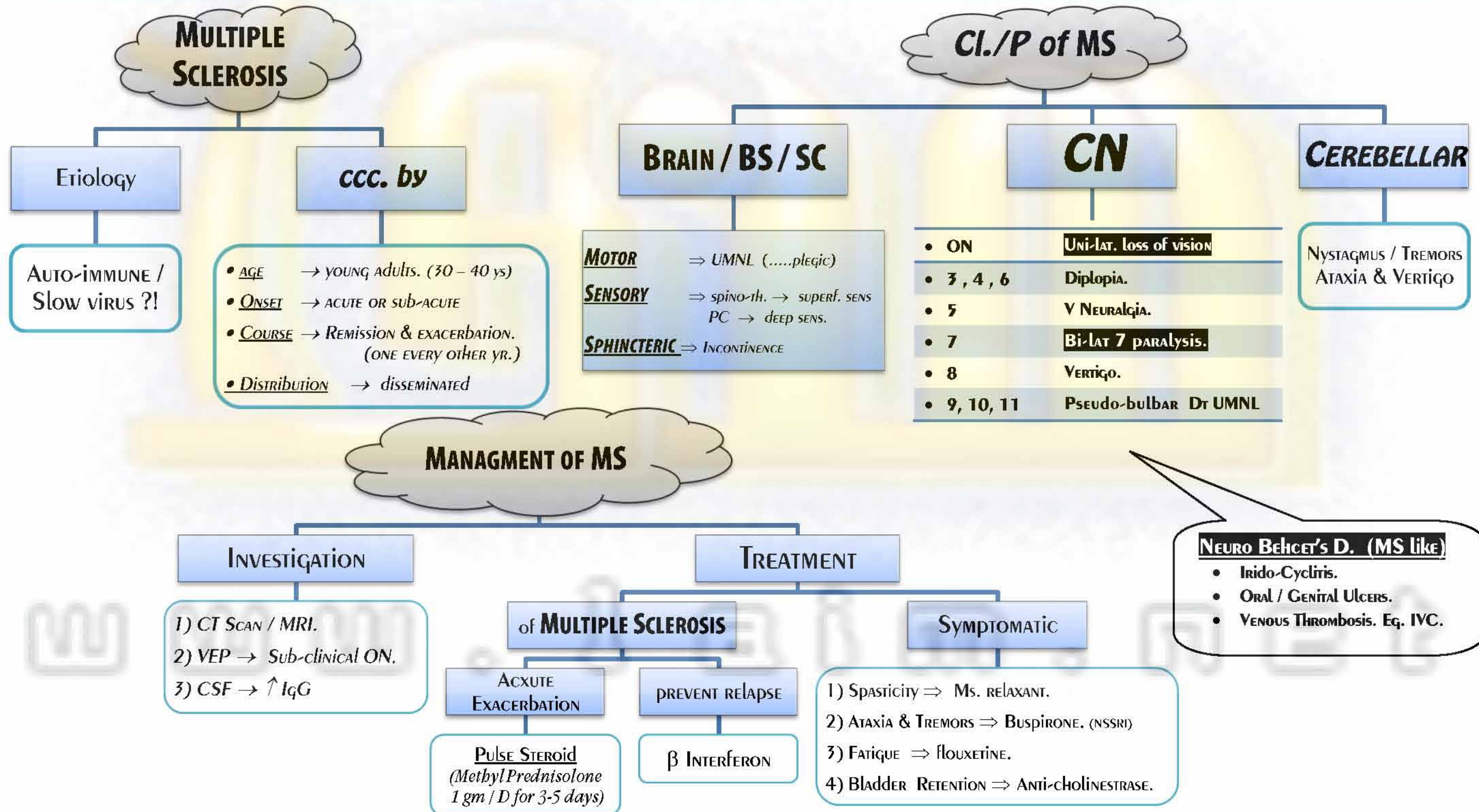
- **MOOD CHANGES** → *euphoria inspite of paraplegia.*
- **SPEECH** → *SLURRED / STACCATO / SCANNED*

MULTIPLE SCLEROSIS

"Inflammatory demyelinating disease of the white matter affecting the **CNS** sparing **PNS**"

LHERMITTE'S ph.

tingling in spine or limbs
on neck flexion dt PC
affection in Cx. region

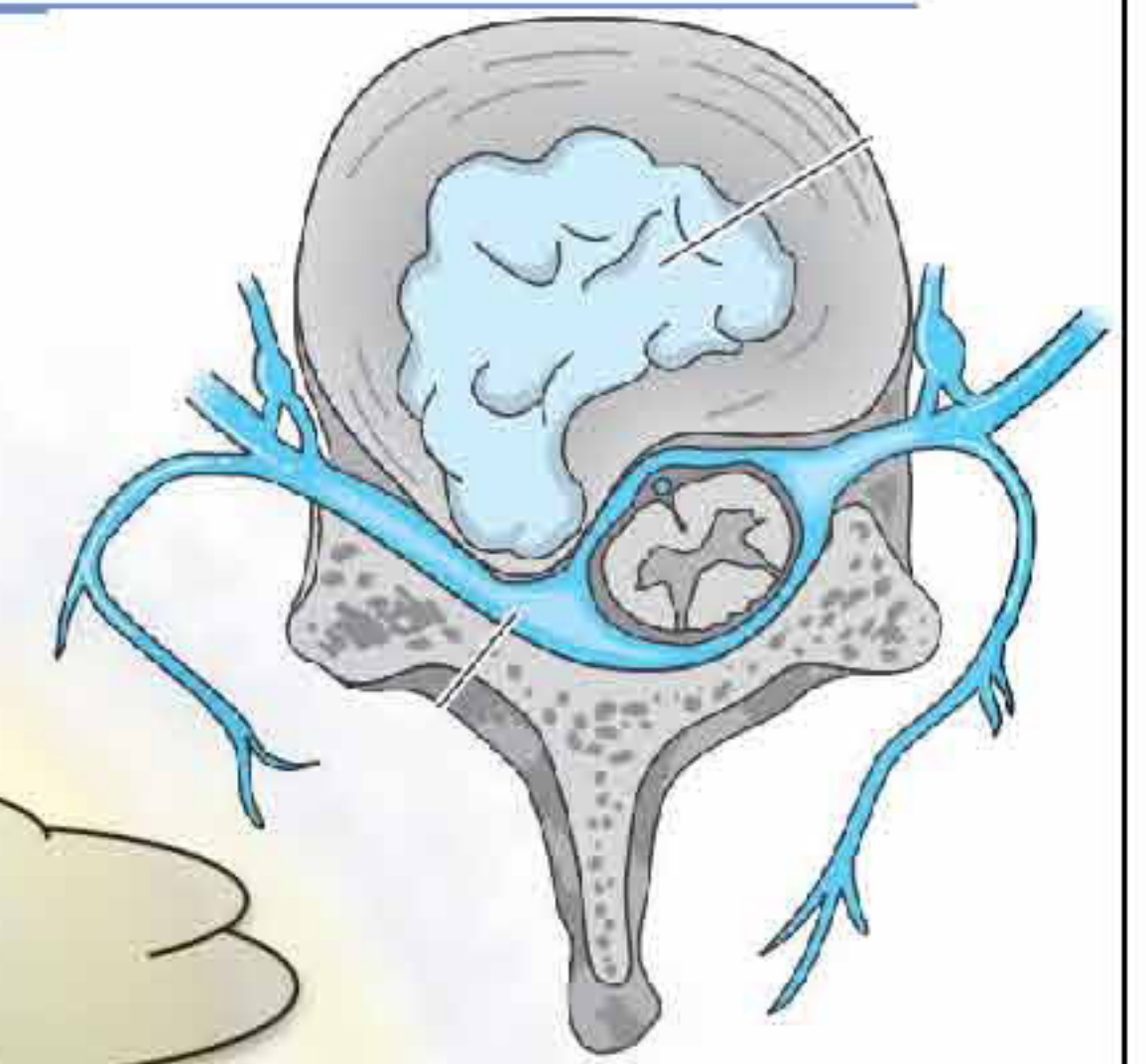


NEURO BEHCET'S D. (MS like)

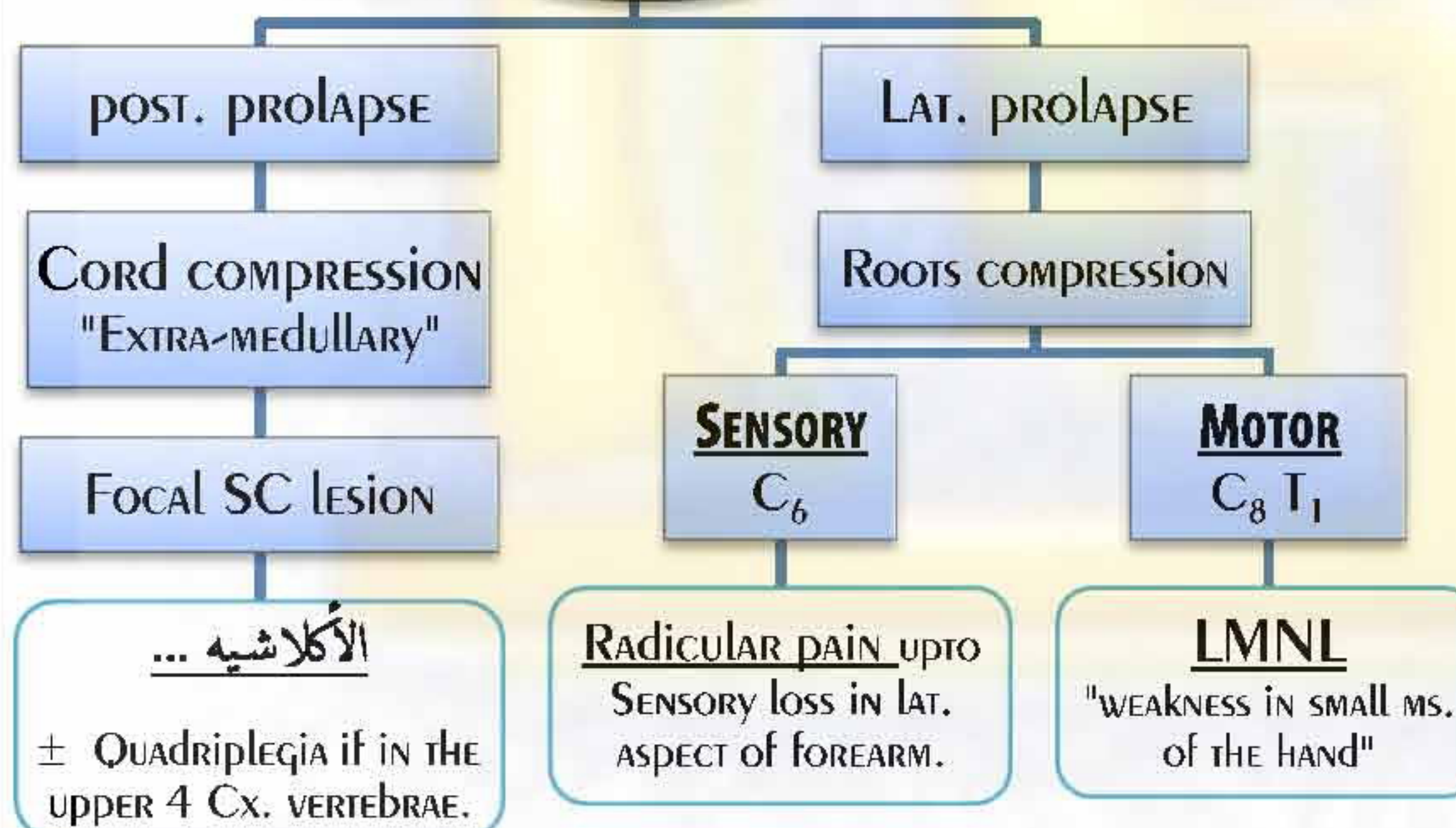
- Irido-Cyclitis.
- ORAL / GENITAL ULCERS.
- VENOUS THROMBOSIS. Eg. IVC.

DISC PROLAPSE & SPONDYLOSIS

	ACUTE DISC PROLAPSE	SPONDYLOSIS
CAUSE	TRAUMATIC dt lifting heavy object Tear in AF → herniation of NP.	DEGENERATIVE AF → herniation of NP. + (Osteophytes – Sclerosis – liping)
AGE	✓ YOUNG. (ACUTE)	✓ Old. (GRADUAL)
SEGMENTS	✓ LUMBAR ($L_4 - L_5$) OR ($L_5 - S_1$)	✓ Cx & lumbar segment



CX. SPONDYLOSIS



LUMBAR DISC PROLAPSE "ACUTE DP / SPONDYLOSIS"

CAUDA EQUINA

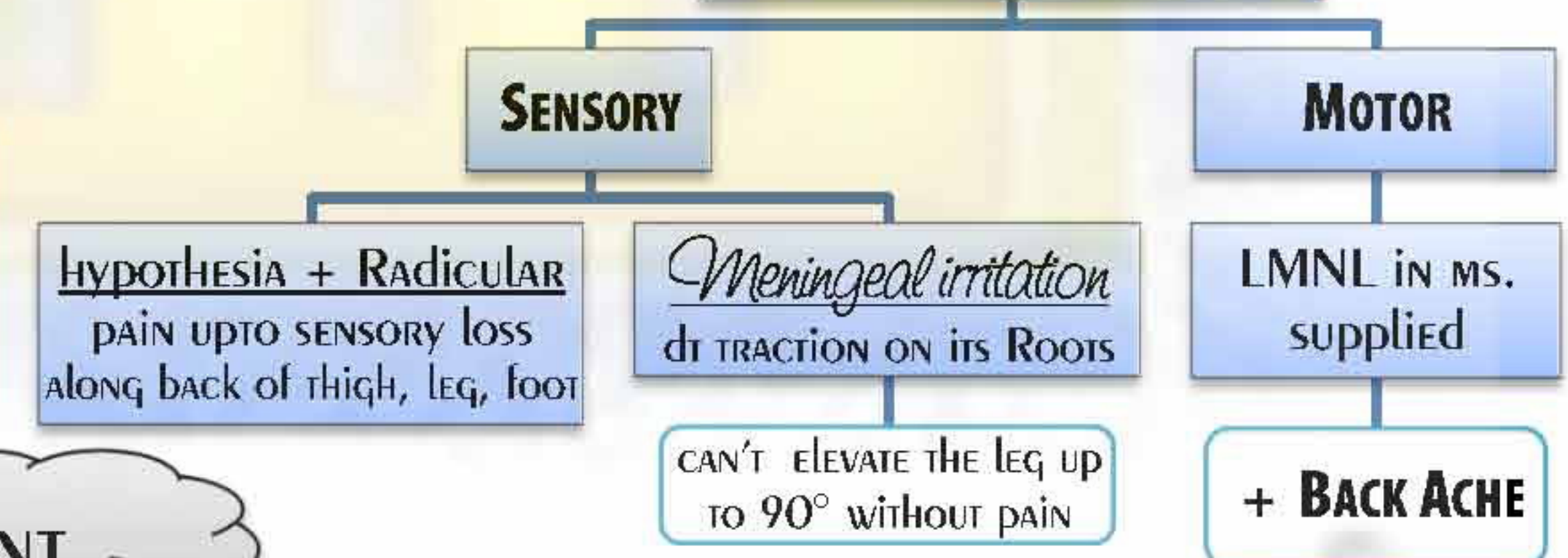
Radiculopathy affecting lumbo
sacral roots dt compression.

LL ASYMMETRICAL + BACK ACHE

- **MOTOR** → LMNL.
- **SENSORY** → radicular.
- **SPHINCTERIC** disturbance.

SCIATICA

Roots Compression
Sciatic N. ($L_4 - S_1$)



INVESTIGATIONS

CT / MRI / X-RAY

- 1) NARROWING of disc space .
- 2) OSTEOPHYTES dt Ca^{++}
of the prolapsed disc.

TREATMENT

MEDICAL

- 1) NSAID.
- 2) Ms. RELAXANT.
- 3) CBZ / GABA-PENTIN.

Physio-Therapy

- 1) Cx ⇒ plastic Collar.
- 2) LUMBAR ⇒ LUMBAR CORSET.
NEVER > 3 ms. to avoid ms. wasting.

**SURGERY if
(DECOMPRESSION)**

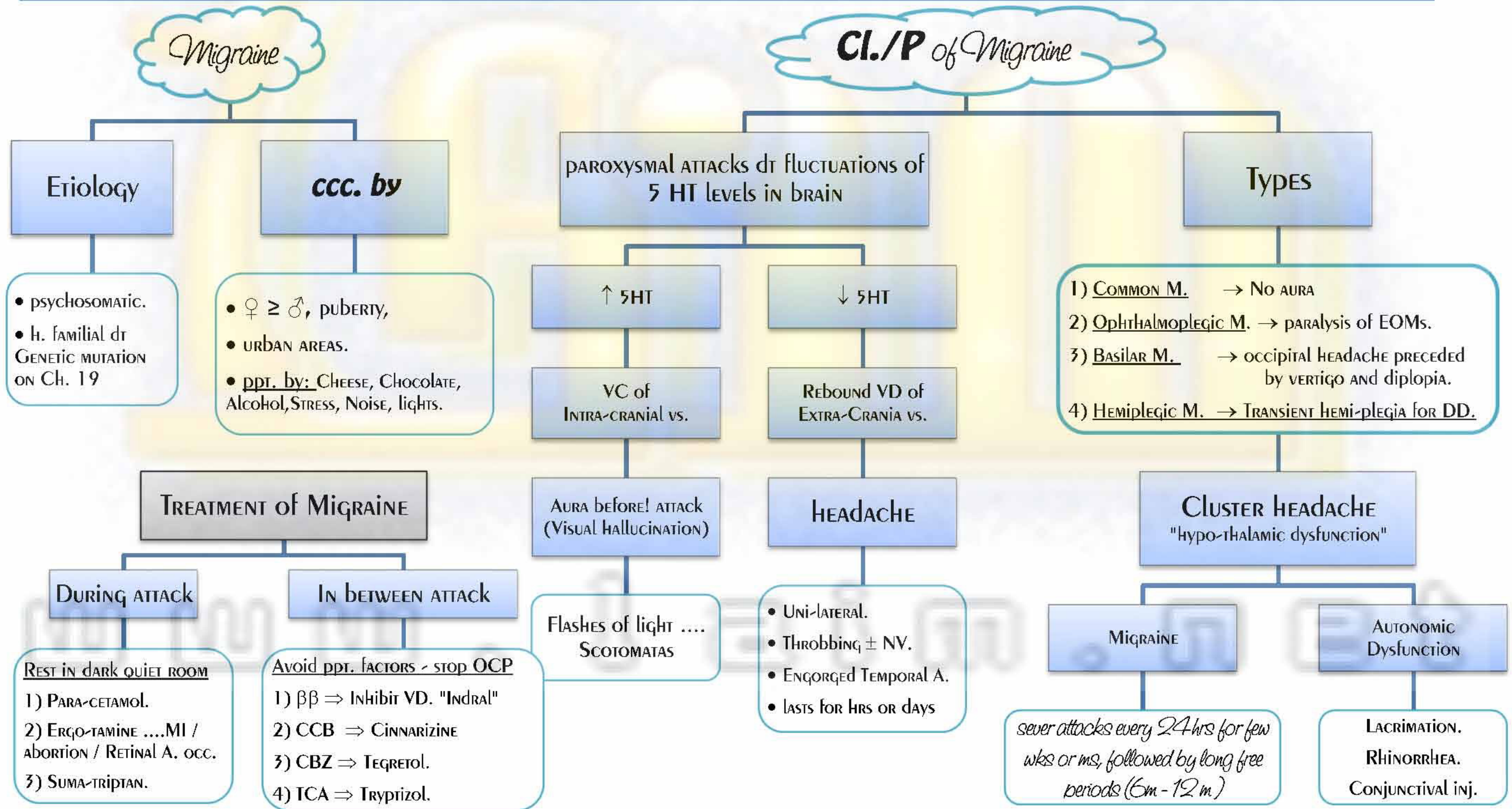
- 1) Cord compression Δ signs.
- 2) Sphincteric disturbance.
- 3) SEVERE RESISTANT PAIN.

Migraine

DD of MigRAINE:

- ✓ TIA.
- ✓ Epilepsy.

"episodic attacks of headache, usually unilateral, preceded by Aura (visual, sensory or autonomic manifestation)"



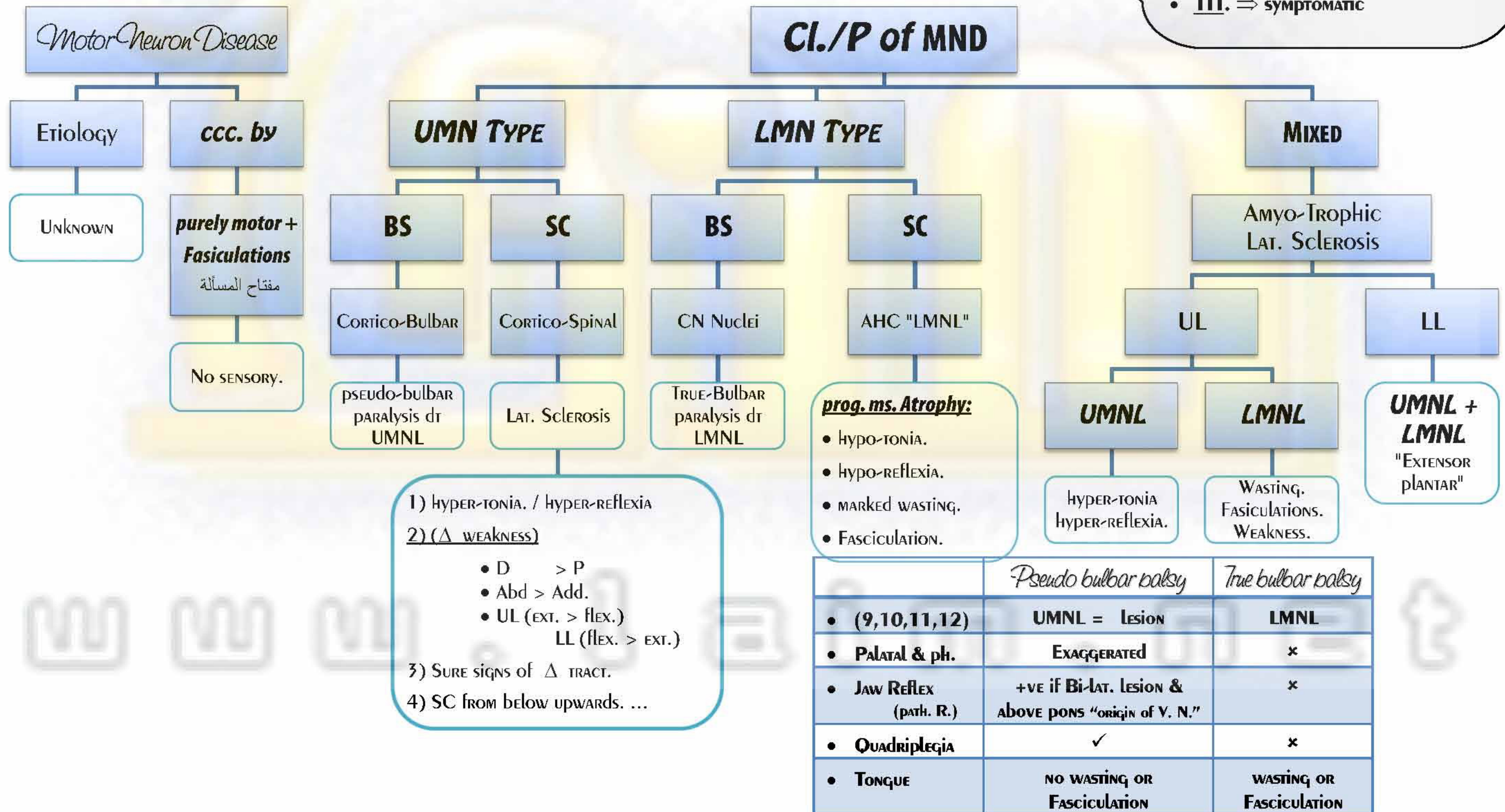
Motor Neuron Disease

"SYSTEMIC DEGENERATIVE DISEASES AFFECTING **MOTOR** SYSTEM **ONLY**"

Gradual / Progressive

- ✓ **BI-LAT. / SYMMETRICAL.**
- ✓ **SC BELOW / UPWARDS. (EARLY / LATE)**
- ✓ **SELECTIVE ... SPHINCTER SPARED)**

- **INVEST.** ⇒ **EMG**
- **III.** ⇒ **symptomatic**



	Pseudo bulbar palsy	True bulbar palsy
• (9,10,11,12)	UMNL = LESION	LMNL
• PALATAL & ph.	EXAGGERATED	x
• JAW REFLEX (path. R.)	+ve if Bi-lat. LESION & ABOVE PONS "origin of V. N."	x
• Quadriplegia	✓	x
• Tongue	NO WASTING OR Fasciculation	WASTING OR Fasciculation

Myopathies

"Diseases of the skeletal ms. sparing the **CNS & PNS**"

DD of purely MOTOR diseases

- Myotonia
- Myasthenia Gravis.
- MND
- Parkinsonism

• +ve FH starts at young age.

• Gradual / Slowly prog.

• مشاكل proximal

- Clumsy gait.
- Inability to climb stairs / pick up objects from ground.
- weakness of certain ms.

1) Ms. dystrophy ⇒ **Degenerative, XL-R**

3) Periodic paralysis. ⇒ AD (DD of MG)

5) Inflammatory ⇒ PMR - polymyositis.

7) Endocrinal ⇒ Grave's D. - Cushing \$ - hyper-PTH

2) Inflammatory ⇒ PMR - polymyositis.

4) Drug induced ⇒ Malignant hyper-thermia.

6) Toxic Myopathy ⇒ Alcohol - Thiazides - Vincitrrisine.

8) Myotonia - Myasthenia Gravis.

Muscular dystrophy

عضلات عامة

GENERAL Ms. WEAKNESS

- Bi-lateral / SYMMETRICAL.
- Hypo-Tonia / Hypo-Reflexia / MARKED WASTING.

• **P > D**

(AS LMNL but P > D)

"**purely MOTOR**"
NO

- NO SENSORY loss.
- NO fasciculation. (to exclude MND)
- NO sphincteric MANIF.

عضلات خاصة

- SERRATUS ANT. & TRAPEZIUS ⇒ Winging of scapula.
- GLUTEUS MEDIUS & MINIMUS ⇒ Waddling gait.
- GLUTEUS MAXIMUS ⇒ GOWER'S sign.
- EXTENSOR MS. of the TRUNK ⇒ LUMBAR lordosis
- Abdominal MS ⇒ POT-belly ABDOMEN.

عضلات خاصة جدا

eg. PECTORALIS HEADS

الوجه

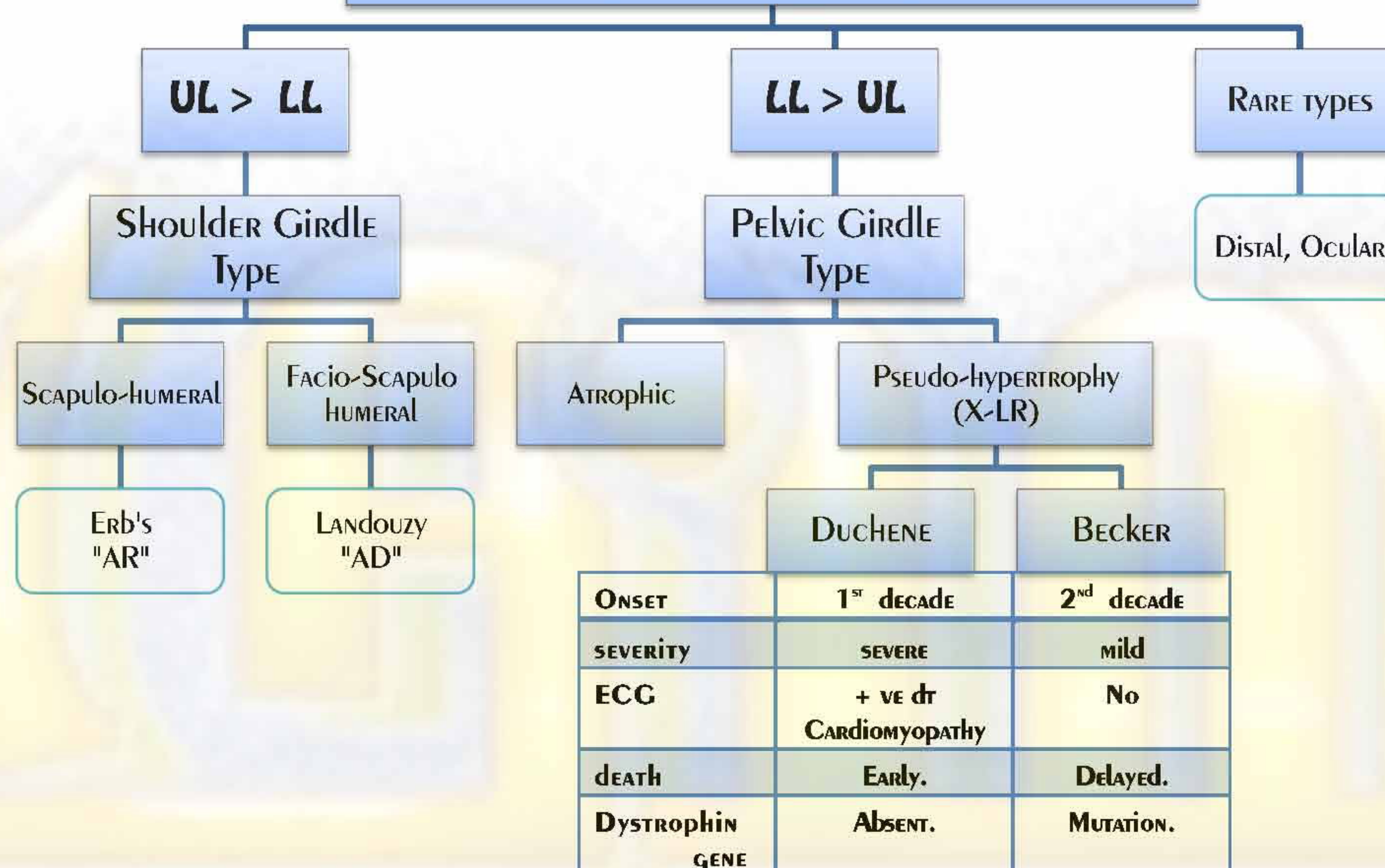
Fascio - scapulo - humeral type

استثناءات

Pseudo-hypertrophy "Duchene"

Calf MS in LL & Deltoid MS in UL

clinical Types of Ms. Dystrophies



MANAGEMENT OF MYOTNIA

INVESTIGATIONS

- 1) $\uparrow$ CREATINE / $\downarrow$ CREATININE in URINE bec.
ms. can't metabolize Creatine to Creatinine.
- 2) Ms biopsy
- 3) EMG - CK (MM fraction especially e Duchene)

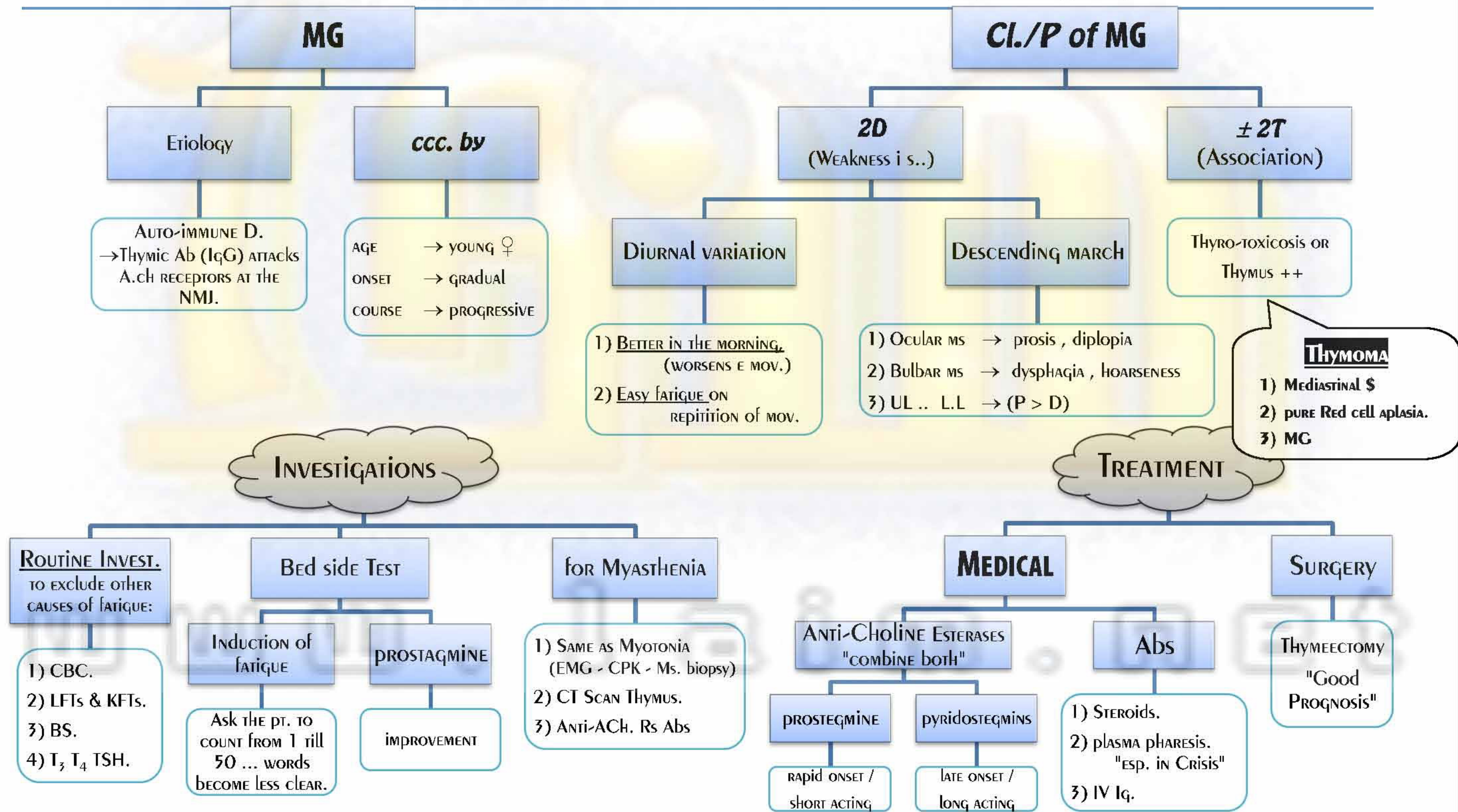
TREATMENT

VITAMINS, physio-th.ms.
Avoid Obesity.
Ms. TRANSPLANT.

MYASTHENIA GRAVIS

سيدة تشكو من تعب و
هذان غير معتاد بعد العمل

"NMJ disease $\Rightarrow$ easy fatigue of skeletal ms. on repetition of mov. & improved by rest."



	<i>Myasthenic Crises</i>	<i>Cholinergic Crises</i>
• CAUSE	NEGLECTING TTT.	EXCESSIVE TTT.
• Etiology	↓↓ A. ch. AT THE MEP	↑↑ A. ch. AT THE MEP
• <u>CL./P.</u>	SEVERE WEAKNESS HYPOVENTILATION & RF (II)	WEAKNESS HYPOVENTILATION
• MUSCARINIC	×	✓ DUMBLES
• Edrophonium (↑ A. Choline)	IMPROVEMENT	WORSENS.
• TTT.	AS BEFORE	ATROPINE ± VENTILATOR

<i>2^{ry} Myasthenia (Eaton Lambert \$)</i>	<i>Neonatal myasthenia</i>	<i>Toxic Myopathy</i>
• para-malignant \$. • <u>Improves e repetition of mov.</u> • <u>ccc. by:</u> Not diurnal Not descending No response to prostegmine.	✓ <i>neonate</i> of a myasthenic mother. ✓ <i>CL/P</i> → weak suckling & cry at birth. <u>"floppy infant"</u> ✓ <i>Recover</i> within 2 - 6 wks <u>TTT.:</u> ICU + Anti-Ch. esterase + plasma ph.	✓ BOTULISM. ✓ TICK PARALYSIS. ✓ OP. ✓ AG.

FAMILIAL PERIODIC PARALYSIS (AD)

- 1) Hypo K type → CHO induced (ttt.: ↓ CHO, K supplement)
- 2) Hyper K type → K induced (ttt: Ca, ttt. Of the cause)

Myotonia

"delayed muscle relaxation after contraction"

CCC. by ⇒ **improves by repetition of mov. - Warmth & worsens by cold**

- **voluntary** → if the pt. clenches his fist → unable to open his hand rapidly.
- **mechanical** → Tap thenar eminence / Tapping on tongue → contraction & delayed relaxation.
- **Electrical** → 2-3 mAmp. Is enough to ⊕ ms. contraction..

Types of Myotonia

	Myotonia Congenita	Myotonia Atrophica
FH	+ve FH = AD	Sporadic
ONSET	✓ Childhood	✓ Adult.
MS	✓ Pseudo hypertrophy	✓ Atrophy esp. of FACE & TEMOPORALIS AS IN CHRONIC LD.
Dystrophy	✓ No	✓ CATARACT Baldness Testicular
TTT.	Phenytoin. "Epanutin"	

DD of Facial weakness

- 1) Facial paralysis.
- 2) Facio-scapulo - humeral.
- 3) Myotonia Atrophica.
- 4) MG.

EPILEPSY

*"paroxysmal attacks of electrical activity in the brain (brain arrhythmia)"
may be convulsive or non-convulsive"*

**DIAGNOSIS IS BASED ON
2 UNPROVOKED SEIZURES**

*sudden onset / offset free
in between attacks to diff. from
schizophrenia.*

Classification of Epilepsy

PARTIAL OR FOCAL SEIZURE

- 1) Simple PARTIAL → ACC. TO AREA AFFECTED.
- 2) Complex PARTIAL → psychomotor OR Temporal lobe epilepsy.
- 3) 2^{RY} GENERALIZED PARTIAL SEIZURES.

1^{RY} GENERALIZED SEIZURES

- 1) Tonic Clonic. (GRAND MAL)
- 2) Absence seizure. (PETIT MAL)
- 3) ATONIC SEIZURE.
- 4) Myoclonic seizure.
(Metabolic AS UREMIA / LCF)

STATUS Epilepticus

- 1) Tonic clonic STATUS. (GRAND MAL)
- 2) Absence STATUS. (PETIT MAL)
- 3) EPILEPSIA PARTIALS CONTINUA.
(focal Epilepsy)

RECURRENT PATTERNS

- 1) Sporadic.
- 2) Cyclic.
- 3) Reflex (MUSICOGENIC)

causes:

- Head trauma.
- Abscess.
- A-U malformations.
- Tumors.
- Cerebral inf. / he.

EPILEPSY

Idiopathic*partial = Focal**1^{ry} Gnerealized**simple**complex**Grand-mal
(Tonic Clonic seizures)**petit-mal
(absent seizures)*

no loss of consciousness
"depends on area affected"

- 1) **MOTOR AREA** $\Rightarrow$ recurrent contraction of certain ms. (fingers, arm, face)
- 2) **SENSORY AREA** $\Rightarrow$ parathesia, auditory or visual hallucinations.
- 3) **LIMBIC SYSTEM** $\Rightarrow$ *Deja-vu*, & *Jamais-vu*. + sense of fear.
- 4) **AUTONOMIC** $\Rightarrow$ recurrent abd. pain.
"visceral Epilepsy"

loss of consciousness
"episodes of abnormal behavior"

- 1) **AURA** $\rightarrow$ unusual smell. (**burning rubber**)
 - 2) **AUTOMATISM** $\rightarrow$ stop activity + minor motor activity eg. swallowing, walking aimlessly.
 - 3) **UN-CONSCIOUS SKILLED ACTIVITY** eg: driving car, playing music.
 - 4) **AMNESIA** for events during seizure.
- DD: Schizophrenia - Hysterical fuges.**

Dramatic loss of consciousness
"hurt himself"

- 1) **AURA** $\Rightarrow$ visual, auditory
- 2) **SUDDEN LOSS OF CONS $\rightarrow$ HURT HIMSELF.**
- 3) **TONIC STAGE** $\Rightarrow$ ms. spasm e epileptic cry.
(due to forced exp. + contracted VC)
- 4) **CLONIC STAGE** $\Rightarrow$ so vigorous $\rightarrow$ Dislocation or fracture - bitten tongue.
- 5) **SLOW RECOVERY** e confusion & amnesia.
"SYNCOPE NO CONFUSION ON RECOVERY"

no loss of consciousness
"school failure"

- 1) **sudden interruption** of stream of consciousness e out being lost.
- 2) **ASSOCIATED** with fluttering, chewing, eye blinking.
- 3) **LAST FOR SECONDS OR MINUTES.**
- 4) **regains awareness v. quickly.**
v. frequent attacks up to 100-300 times/d
(petite mal status OR pyknolepsy)

Treatment of Epilepsy

- 1) **CBZ.** "of choice" or "**GABA-pentin**"
- 2) **NA VALPROATE.** "hepato-toxic"
- 3) **Topiramate.** "if resistant"

- 1) **Phenytoin.**
- 2) **CBZ.**
- 3) **NA VALPROATE.**

"cleft lip, palate,
hypertrophy of gums -
Megakoblastic An."

- 1) **Ethuxamide.**
- 2) **Lamotrigine.**
- 3) **NA Vaplorate.**

3-STATUS EPILEPTICUS

"prolonged repeated attacks of epilepsy without regaining consciousness in bet"

Types:

- a. GRAND MAL
- b. PETITE MAL.
- c. Focal epilepsy (epilepsia PARTIALS CONTINUA)

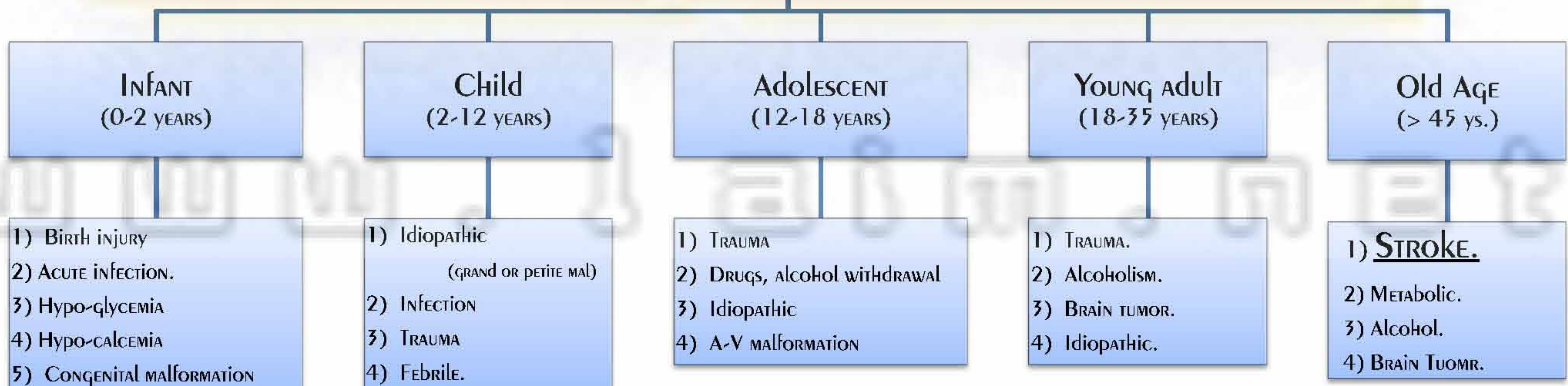
TTT of STATUS Epileptics:

- 1) Hospitalization
- 2) Isolation of the patient in dark room.
- 3) MOUTH GAG - O₂ THERAPY + ETT.
- 4) PHENYTOIN → VALIUM → PHENOBARBITOL → G. ANESTHESIA.
- 5) IV GLUCOSE 50% TO EXCLUDE HYPOGLYCEMIA

DRUG RULES:

- 1) ONE DRUG IS BETTER THAN 2 TO ↓ S/E.
- 2) GRADUAL WITHDRAWAL + STOP ANTI-EPILEPTICS: if the pt. BECOMES SEIZURE FREE FOR 2 YS + NORMAL CT SCAN & EEG
- 3) PREGNANCY → MONO-THERAPY IS BETTER (CBZ – LAMOTRIGINE) ... # PHENYTOIN.

CAUSES OF EPILEPSY (SEIZURES)



Meningitis

SEE CLINICAL PATHOLOGY

	Bacterial	TB	Viral
CA	1) MENINGIO-COCCI. (EPIDEMIC) 2) PNEUMOCOCCI – STREPT. 3) STAPH. - H. INFLUENZA.	TB	1) HERPES. 2) ECHO-COXACHIE. 3) MUMPS.

SYMPTOMS	<u>Fever → then Headache</u>		
	<u>Meningeal irritation</u> ↓ 2 Fs (fever – Fits) 1) NECK RIGIDITY. 2) BACK RIGIDITY. 3) +VE BRUDZINSKI: neck flexion ⇒ flexion of both hip & knee. 4) + VE KERING SIGN: hip flexion ⇒ sever pain & inability to extend knee.	↑↑ ICT ↓ 4 Ps	<u>Meningo-coccal Septicemia</u> ↓ -Water house-Friedreichson's S ↓ ↑ capillary fragility ↓ purpura fulminans Bilat. Adrenal hge. ↓ Acute Adrenal Failure ... Shock

CSF EXAM. by LP "Bed side Test"

	Bacterial	TB	Viral
• PRESSURE	↑	↑	↑
• PROTEINS	↑	↑	↑
• GLUCOSE	↓	↓	N
• CHLORIDE	↓	Markedly ↓	N
• cells	PNLs	lymphocytes	lymphocytes

Treatment of Meningitis

1) OUTBREAKS ⇒ Rifampicin for CONTACTS. 2) PENICILLIN G ⇒ 24 million U / D. 3) 3rd G CS ⇒ Cefotaxime. 4) Staph ⇒ Vancomycin.	Anti-TB for 1-2 yrs. (LIVER + SPLEEN + MENINGITIS = TB / LYMPHOMA / LEUKEMIA)	Acyclovir[®] infusion
--	--	---------------------------------------

DD of MENINGEAL IRRITATION:

- 1) **MENINGISM** ⇒ MENINGEAL IRRITATION + ABSENCE of MENINGITIS. (Viral / typhoid)
- 2) **ENCEPHALITIS** ⇒ CSF → ↑ PROTEINS + NORMAL SUGAR & CL.
- 3) **SUBARACHNOID HGE** ⇒ CSF & CT SCAN.

ENCEPHALITIS

mostly Viral

"inflammation of the brain parenchyma... if spinal cord is involved $\Rightarrow$ encephalo-myelitis."

➤ ETIOLOGY:

<u>1^{ry}</u>	<u>2^{ry}</u>
• Rabies. • Polio. • I.B. virus.	a. Viral $\rightarrow$ Mumps, Herpes Simplex (M/C) Echo - Coxsackie b. Bacterial $\rightarrow$ Typhoid. c. Parasitic $\rightarrow$ Malaria.

➤ Cl./P of ENCEPHALITIS:

1) **FEVER "Flu like" $\rightarrow$ DETERIORATION of LEVEL of CONSCIOUSNESS.**

2) **NEUROLOGICAL MANIFEST.:**

- Cerebral $\Rightarrow$ extra pyramidal.
- Cerebellar $\Rightarrow$ Ataxia.
- Brain stem $\Rightarrow$ CN lesion + + sensory tracts)

➤ INVEST.:

- 1) CT / MRI $\Rightarrow$ diffuse edema.
- 2) EEG $\Rightarrow$ slow waves.
- 3) CSF exam $\Rightarrow$ $\uparrow$ proteins + Normal Sugar & Cl.

➤ TREATMENT:

- 1) Dehydrating measures + Anti-Convulsants.
- 2) Viral $\Rightarrow$ Acyclovir.
- 3) Bacterial $\Rightarrow$ ABS.
- 4) Steroids ?!! $\Rightarrow$ to control brain edema.

CRANIAL NERVES

	TRIGEMINAL NEURALAGIA	BELL'S PALSY
➤ DEF.	SEVERE PAROXYSMAL ATTACKS of pain along ONE OR MORE of the sensory brs. of V. N.	ACUTE INFLAMMATION of the 7 N. NEAR the stylomastoid FORAMEN.
➤ ETIOLOGY	<u>middle age 40 - 50 ys</u> • Alcohol - D.M. • H. Z. • Aberrant loop of A. compressing its rootlets.	• REACTIVATION of herpes virus. • AUTOIMMUNE?! • Cold exposure ?! "Old theory"
➤ CL./P	<u>SEVERE brief LANCINATING pain</u> • Knife-like or electric shock. • LASTS for 1-2 min. • No sensory loss	• ACUTE Pain behind the ear → (LMNL) • ± ↓↓ TASTE ON THE ANT. 2/3 of TONGUE !? • FACE NUMBNESS !?
➤ TTT.	1) Analgesics. 2) CBZ. (TEGRETOL) or GABA-pentin. 3) recently Topiramate.	1) Medical → Steroids + Acyclovir 2) Physio-th. → Galvanic ⊕ of the facial ms 3) Surgical → N. Grafting + Decompression.

Facial Nerve lesion

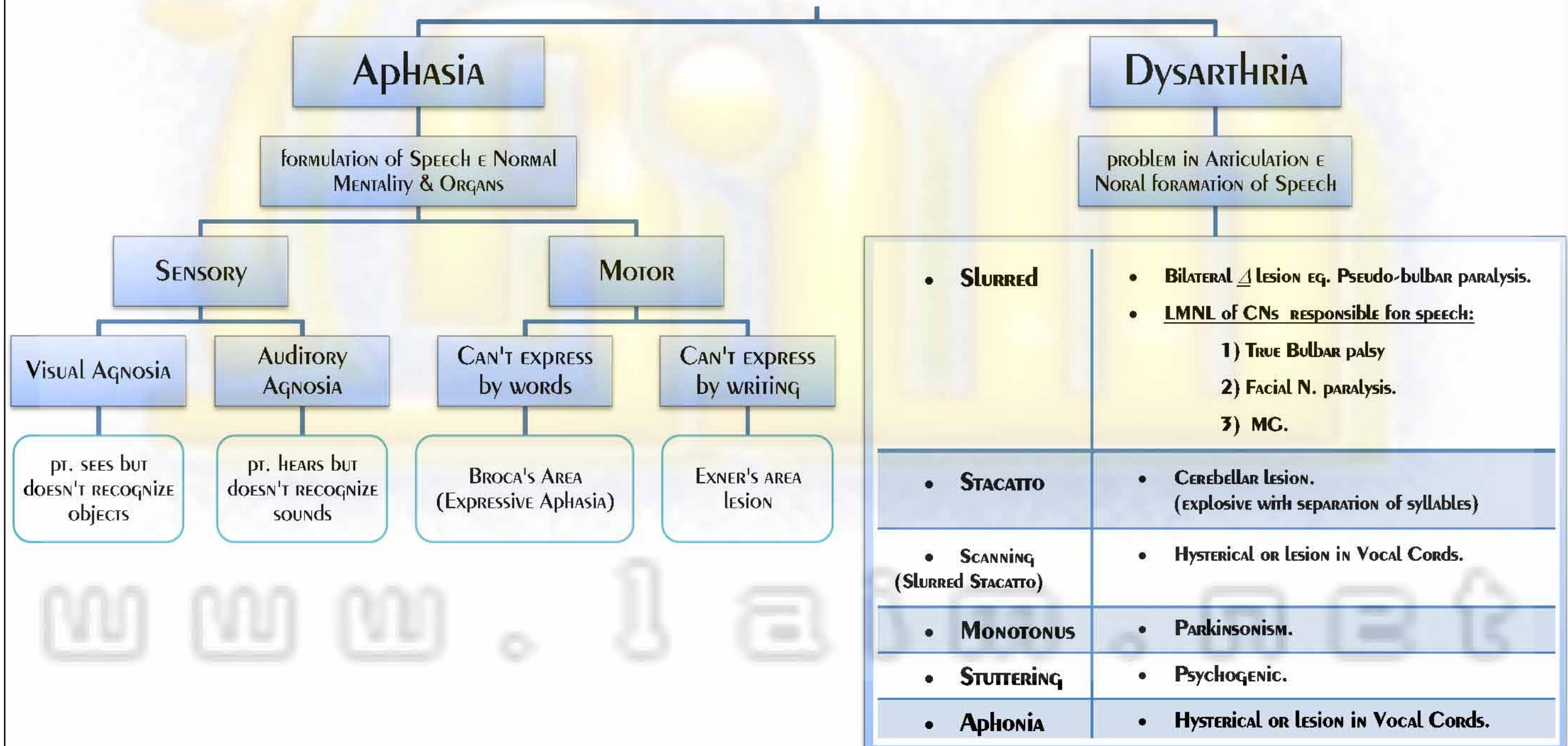
	UMNL	LMNL
CAUSES	• Capsular hemi-plegia	• BS lesion. (NUCLEUS) • Bell's palsy. (NERVE)
lesion	• ABOVE FACIAL NUCLEUS	• FACIAL NUCLEUS OR THE N. itself.
Paralysis	• Opp. side. • LOWER 1/2	• SAME side. • Upper & lower 1/2 of the face
MOVEMENTS	• Loss of voluntary. mov. only.	• Loss of voluntary – EMOTIONAL.
Hemi-plegia	• Hemi-plegia same side of paralysis.	• Crossed hemi-plegia (if BS lesion)

ATAXIAS

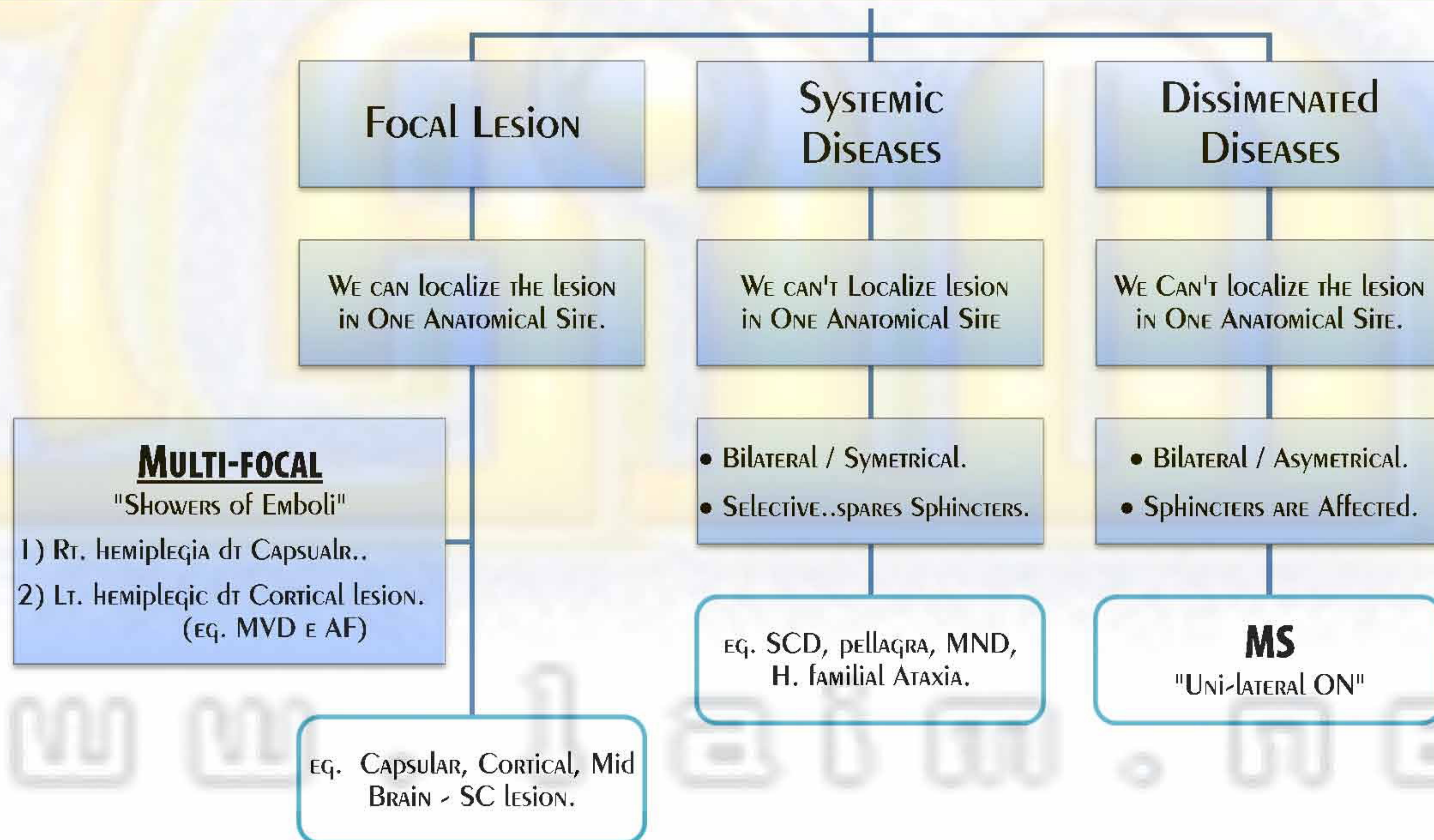
"In-coordination of voluntary mov. in absence of motor weakness"

CEREBELLAR (MOTOR)	H. FAMILIAL	SENSORY
1) H. FAMILIAL → F. ATAXIA, M. ATAXIA. 2) VASCULAR → CEREBELLAR A. occlusion. 3) TOXIC → ALCOHOL – BARBITURATES. 4) NEOPLASTIC → MEDULLOBLASTOMA 5) DEMYELINATING DISEASE. (MS)	GRADUAL / PROGRESSIVE. 1) Bi-lateral / SYMMETRICAL. 2) AFFECT SC below upwards: • <u>EARLY</u> → PARA-plegia. • <u>LATE</u> → QUADRI-plegia. 3) SELECTIVE ⇒ SPHINCTERS ARE SPARED.	DUE TO loss of DEEP SENSATION AT ANY point in its pathway 1) PN → D. NEUROPATHY. 2) post. ROOT → TABES dorsalis. 3) PC → SCD, TV Myelitis. 4) THALAMUS → THALAMIC S. 5) MEDIAL LEMISCUS → BS LESION.
CL./P		
1) HYPOTONIA hyporeflexia – NO WEAKNESS. 2) INCOORDINATION: • Nystagmus → on fixation – hz → Rapid phase toward fixing point • Dysidiadokokinesia – Kinetic Tremors. • Staccato speech – Titubation of the Trunk. 3) GAIT → DRUNKEN GAIT.	F. ATAXIA = SCD (3 PS) + CEREBELLAR 1) P. TRACT → bilateral EXTENSOR PLANTAR. 2) PN → GLOVE & STOCK HYPOTHESIA. 3) PC → loss of DEEP SENSATION by TF 4) CEREBELLAR → INTENTION TREMORS	1) KINETIC TREMORS ON closure of eyes. 2) +ve ROMBERG'S TEST 3) STAMPING GAIT due to DEEP SENSORY loss.
TESTS		
• FINGER TO NOSE. • FINGER TO FINGER. • FINGER TO DOCTOR FINGER. • BUTTONING & UNBUTTONING → EARLIEST SIGN. • HEEL TO KNEE TEST. – REBOUND ph.	<i>Intention Tremors & Dysmetria</i> <i>which ↑ on closure of the eyes</i>	1) FINGER TO NOSE. 2) FINGER TO FINGER. 3) RHOMBERGISM. <i>Normal but when pt. closes his eyes he can't do that.</i>

SPEECH DISORDERS



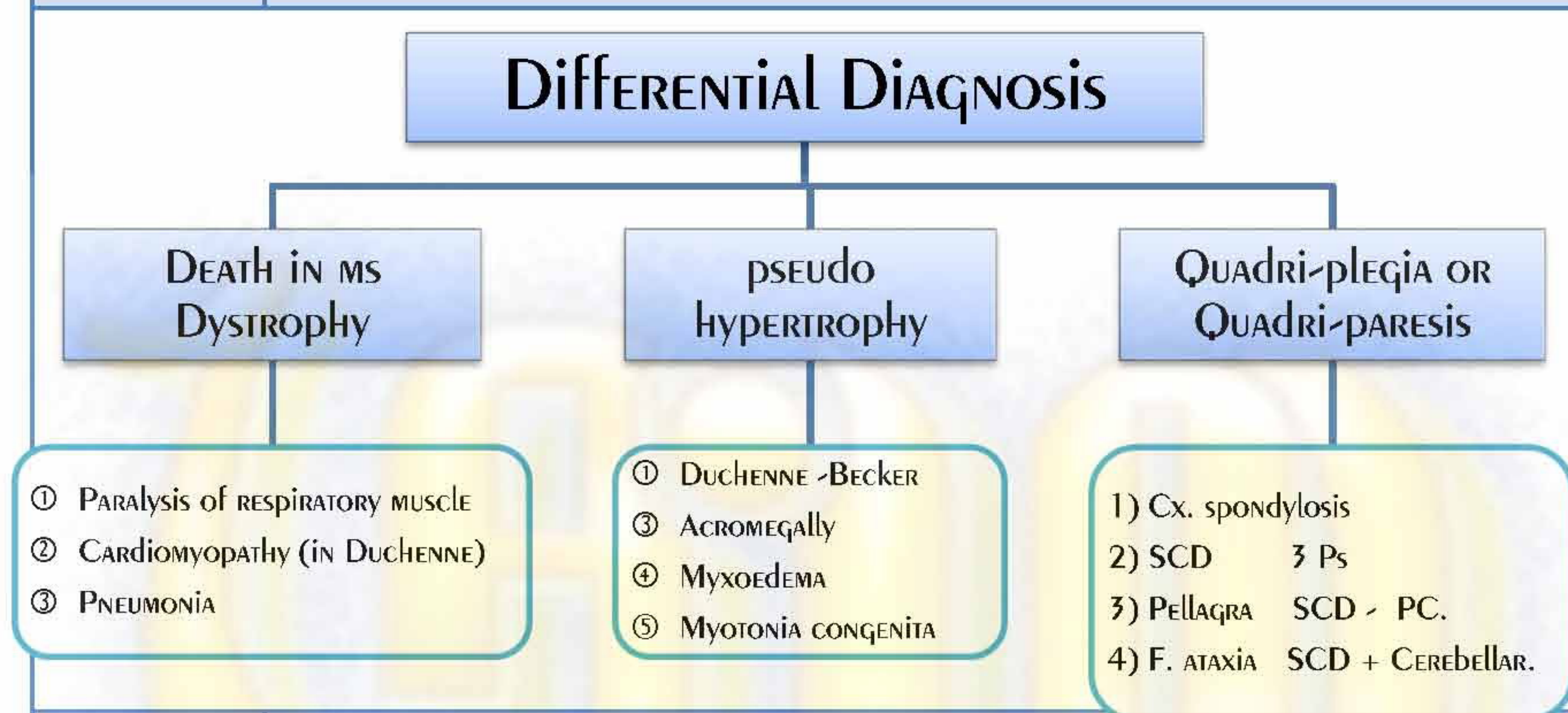
CLASSIFICATIONS OF NEUROLOGICAL LESIONS



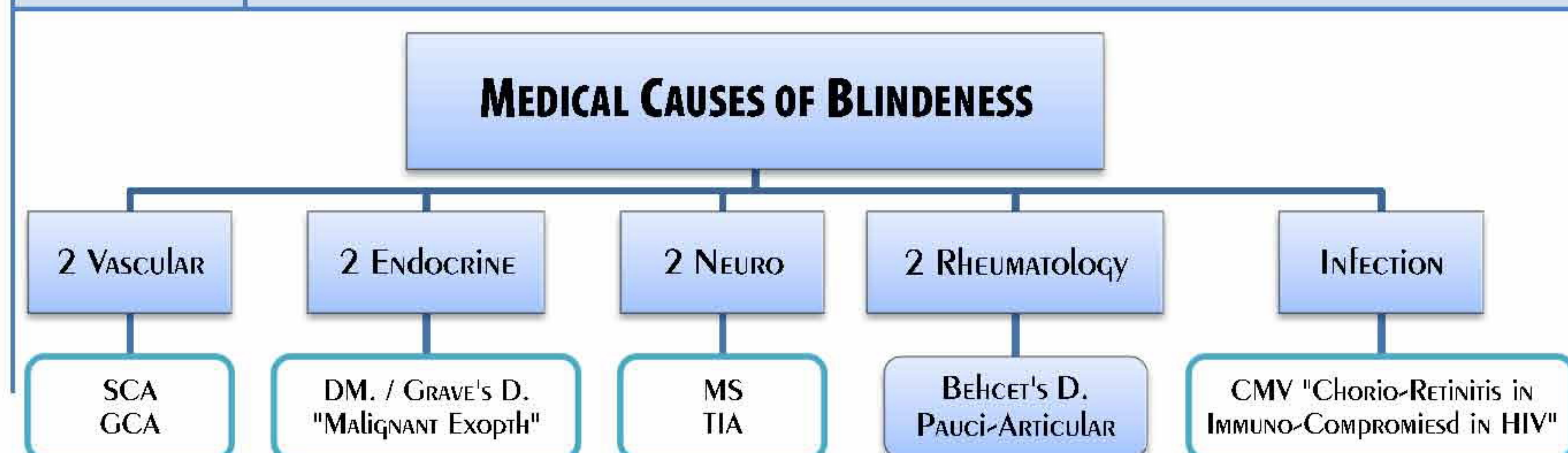
Important Notes in Neurology

p. 1	Sub-Cortical lesion = lesion in Corona Radiata
	Like Cortical hemi-plegia but without cortical manifest.
p. 5	Important \$ in BS lesions
	1) Weber's \$ = Mid brain lesion – 4th CN 2) Benedict's \$ = Weber's \$ + Ataxia in paralyzed side. 3) Millard \$ = Pontine lesion = hemiplegia + CN 3,7. 4) Foville's \$ = hemi-plegia + MLB lesion → Conj. Dev. Of the eye to same side of lesion.
p. 7	Causes of Recurrent Hemi-plegia
	1) TIA 2) HTN enceph. 3) MS 4) post-epileptic. "Todd's paralysis" 5) Psychogenic. "conversion-diss." 6) Migrain "hemi-plegic Migraine"
	Systemic diseases
	1) SCD - Pellagra. 2) F. Ataxia. 3) MND.
	DD of Dissociated sensory loss
	1) Ant. spinal A. occ. 2) <u>Early</u> syringe-myelia 3) Brown-Sequard\$. 4) Lat. Medulla \$

p. 28	DD o f ACUTE PARALYTIC IllNESS
	1) TV Myelitis – ANT. SOINAL A. occlusion. 1) GB \$. 2) MG - Botulism. 3) ACUTE CORD COMPRESSION. (Disc prolapse)
p. 33	



p. 42	Hyper-TONIA												
	<table border="1"> <thead> <tr> <th>Spasticity</th><th>Rigidity</th></tr> </thead> <tbody> <tr> <td>• PYRAMIDAL lesion.</td><td>• EXTRA-PYRAMIDAL lesion</td></tr> <tr> <td>• CLASP knife.</td><td>• LEAD pipe OR Cog-wheel</td></tr> <tr> <td>• FLEXORS in UL.</td><td>• P > D.</td></tr> <tr> <td>• EXTENSORS in LL.</td><td>• FLEXORS of UL / LL / TRUNK.</td></tr> <tr> <td>• Hyper-reflexia.</td><td>• Hypo-reflexia.</td></tr> </tbody> </table>	Spasticity	Rigidity	• PYRAMIDAL lesion.	• EXTRA-PYRAMIDAL lesion	• CLASP knife.	• LEAD pipe OR Cog-wheel	• FLEXORS in UL.	• P > D.	• EXTENSORS in LL.	• FLEXORS of UL / LL / TRUNK.	• Hyper-reflexia.	• Hypo-reflexia.
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p. 73													



p. 73	DD of PARATHESIA in ONE limb								
	1) TIA. 2) MONO-NEUROPATHY. 3) Spondylosis. 4) Focal Epilepsy. "SENSORY JAKSONIAN fit" 5) Hypotension.								
p. 75	3 Vs. Occlusion → HEMI-plegia								
	1) MCA "CAPSULAR" UL = LL. 2) MCA "MAIN STEM" UL > LL. 3) ACA "MAIN STEM" LL > UL.								
p. 91	DD of Non-Epileptic SEIZURES								
	1) MIGRAINE. 2) SYNCOPE. 3) TIA. 4) Hypo-glycemia								
p. 93	DD of MENINGEAL IRRITATION								
	<table border="1"> <tr> <td>1) MENINGITIS</td><td>FEVER → HEADACHE → Neck Rigidity.</td></tr> <tr> <td>2) SA hGE</td><td>RUPTURE ANEURYSM → sudden SEVER HEADACHE → THEN lysis of RBCs → RELEASE of pigments → MENINGEAL IRRITATION AFTER 12 hr.</td></tr> <tr> <td>3) MENINGISM</td><td>IRRITATION E OUT INFECTION. (typhoid fever)</td></tr> <tr> <td>4) ENCEPHALITIS</td><td>DETERIOTATION of LEVEL of CONSCIOUSNESS.</td></tr> </table>	1) MENINGITIS	FEVER → HEADACHE → Neck Rigidity.	2) SA hGE	RUPTURE ANEURYSM → sudden SEVER HEADACHE → THEN lysis of RBCs → RELEASE of pigments → MENINGEAL IRRITATION AFTER 12 hr.	3) MENINGISM	IRRITATION E OUT INFECTION. (typhoid fever)	4) ENCEPHALITIS	DETERIOTATION of LEVEL of CONSCIOUSNESS.
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p. 97	TB & NEUROLOGY								
	1) TB & MENINGITIS → Neck Rigidity. 2) POTT'S DISEASE → paraplegia. 3) TUBERCULOMA → SOL. 4) INH → PN dt B ₆ def.								

p. 98	PSEUDO-TUMOR CEREBRI
	BENIGN ↑ICT without SOL due to: • hyper-VITAMINOSIS A – OCP – PREGNANCY. • INVEST.: NORMAL CT SCAN. • TTT.: STEROID – DIURETICS – SHUNT.
p. 98	CAUSES of UNI-LATERAL PROPTOSIS
	1) GRAVE'S DISEASE. (STARTS UNI-LAT.) 2) CST. 3) WEGNER'S D. 4) BUPHTHALMUS. 5) HISTIO-CYTOSIS X.